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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and to improve the character of the service rendered to the public.

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TO ENLARGE THE WEITZEL LOCK.

The government officials at Sault Ste. Marie have given out the first definite outline of plans which are being considered for the new Weitzel lock. Within two years an appropriation is expected which will transform the Weitzel lock into a piece of construction which will far surpass the Poe lock in size. The plans will be completed and perfected by the time congress makes the appropriation for the improvement. At present the plans are in embryo, but it is definitely stated that the new lock will be 1,350 feet in length between gates and 70 feet in width. The reason for the new lock being narrower than the Poe lock is due to the difficulty in managing gates for a lock over 100 feet wide. The future steamers will be larger still, and instead of increasing the width the lock will be nearly a quarter of a mile long. This will accommodate three of the average longest lake steamers end to end. A large item of expense will also be obviated in making the lock of the proposed width of 70 feet, owing to the fact that there will not be need of much extra excavation. The old Weitzel lock is 80 feet wide in the basin and 60 feet at the gates, and the canal above will average 80 feet as far up as the new lock will extend.

It may seem strange to say that the new Poe lock is somewhat inadequate, but its dimensions are not precisely well fitted to accommodate the biggest vessels, which are 500 feet long and 50 feet beam. Two of them cannot be locked through at once. For other smaller types of steamers the lock is particularly well equipped.

SOMEWHAT APOCRYPHAL.

President Roosevelt possesses a characteristic sense of humor. It is vigorous and sometimes almost grotesque.

When he was Assistant Secretary of the Navy, during the preparation for the Spanish war, the Government was buying a number of yachts to be converted into torpedo-boats, dispatch-boats, scouts, etc. Considerable intimacy existed between the family of President Roosevelt and that of one of the officers of the Navy in the Department. The wife of this officer got a fancy she would like to have one of these beautiful little boats bear her name. There is a prejudice in the Navy against giving a woman's name to a war vessel of any type. It is believed to be unlucky. But the officer, who found it easier to face official prejudice than to resist the importunities of his better half, made the request of Mr. Roosevelt.

The Assistant Secretary of the Navy hesitated. "It won't do," he said. "I would like to gratify your wife, but a woman's name won't do."

Then a thought occurred to him, and he relented. "I will fix it," he said. "Tell your wife it will be all right." The next day the boat was named: "The Vixen."

"I am going to put you in command of her," said Mr. Roosevelt when he announced the name.—Baltimore Sun.

IRON AND STEEL MANUFACTURE.

The commanding position of the United States in the production and manufacture of iron and steel is illustrated by some figures published in the London "Commercial Intelligence," a copy of which has just reached the Treasury Bureau of Statistics.

The world's total product of pig iron in 1901, it says, amounted to 40,408,000 tons, of which the United States contributed 15,878,000 tons; the United Kingdom, 7,750,000 tons; Germany, 7,663,000 tons; Russia, 3,100,000 tons; France, 2,352,000, and the remainder of the world, 3,655,000 tons. Comparing the product of 1901 with that of the annual average for the five-year period, 1866-70, it will be seen that the United States has increased its iron steel output far more rapidly than any other nation, the figures being, United States from 1,464,000 tons to 15,878,000 tons, an increase of 985 per cent.; United Kingdom, from 5,133,000 tons to 7,750,000 tons, an increase of 51 per cent.; Germany from 1,225,000 tons to 7,663,000 tons, an increase of 525 per cent.; and the entire world, exclusive of the countries mentioned, from 2,710,000 tons to 9,117,000 tons, an increase of 236 per cent. An even more noticeable feature of this growth pointed out by the authority from which these figures are quoted, is the steady and enormous growth of the proportion of the world's product supplied by the United States and the equally rapid decadence in the position held by Great Britain. Thirty-five years ago the United Kingdom produced practically one-half of the world's pig-iron, while the United States produced less than one-seventh of the total; whereas, in 1901, the United States stood first in its proportion of the total, contributing practically four-tenths, as against less than two-tenths by the United Kingdom, and about the same share by Germany.

In the five year period, 1856-70, the world's per capita consumption of pig-iron was 17 pounds; in 1901 it was 57 pounds; while in the latter year the United States consumed 455 pounds per capita, and the United Kingdom 350 pounds per capita.

The effect of this remarkable increase in the production of iron in the United States has been strongly marked in its relation to our foreign commerce. Imports of iron and steel manufactures in 1882 amounted to \$67,976,897 and formed 9.3 per cent. of the total imports; in 1901 they had fallen to \$17,874,789 and formed but 2.2 per cent. of the total imports. On the other hand, our exports of iron and steel manufactures have grown during the same time from \$20,748,206 in 1882, to \$117,319,320 in 1901. They formed in 1882 about 3 per cent. of the total exports and 15 per cent. of the manufactures exported; while in 1901 they formed 8 per cent. of the total exports and 28 per cent. of the manufactures exported.

The following table shows the production of pig iron in the United States, United Kingdom, Germany, and all other countries at quinquennial periods from 1865 to 1901, stated in gross tons:

Year.	United States.	United Kingdom.	Germany.	All Other Countries.
	tons.	tons.	tons.	tons.
1865	831,770	4,819,300	759,700	2,839,300
1870	1,665,179	5,963,515	1,369,139	2,902,200
1875	2,023,733	6,365,462	1,997,317	3,509,736
1880	3,835,191	7,749,233	2,685,909	3,201,248
1885	4,044,526	7,415,469	3,629,158	4,439,221
1890	9,202,703	7,904,214	4,584,835	5,737,993
1895	9,446,308	7,703,459	5,379,041	6,375,800
1900	13,789,242	8,959,691	8,385,885	9,265,200
1901	*15,878,354	7,750,000	*7,736,663	*9,042,200

*Iron and steel association figures.

THE GULF STREAM MYTH.

In the light of science to-day the Gulf Stream as a determining factor in climate-forming loses all of its old-time glamour. Moreover, what is true of its relative insignificance in this respect is also true, *a fortiori*, of the Kuro Siwo, or Japan Current. This current, a very much feebler stream than the Gulf Stream, owing to the enormous size of the mid-Pacific basin and the unfavorable configuration of the Asian continent, has few of the dramatic characteristics of the Gulf Stream, and yet the Mauryan myth has endowed it also with the virtues supposedly belonging to its Atlantic congener, and it is but recently that the Chamber of Commerce of San Francisco was passing

resolutions about it, since they believed that, if its shifting could be studied, California weather might be foreseen long in advance. In this they were confusing effect with cause, and were on the wrong track. Had they passed resolutions about the shifting of the great Pacific anti-cyclone, they would have hit the nail on the head, since it is the variation in its pressures and in its position that makes for climatic and weather changes on the Pacific coast, and also causes any shifting in the drift of ocean currents. And the same is true of the Atlantic basin—the Gulf Stream shifting with the winds and the general barometric stresses; which shifting, far from being the cause of any weather vagary, is an indication of the secondary relation of the ocean current to the primary cause of weather changes, the shifting of the aerial currents; in fine, the anti-cyclone itself. We who live in the Atlantic seaboard States of the United States notice the effect of the shifting of the anti-cyclone less than Europe, perhaps, since for the most part weather in the East is not brewed in the ocean, because the aerial drift moves from west to east and carries the oceanic influences eastward, or away from our shores. But occasionally the Atlantic anti-cyclone obtrudes on our southern coasts with very remarkable results; at times apparently reversing the seasons by setting up a south to north (southeast to northwest, southwest to northeast) circulation that is the primary cause of the spells of halcyonic weather that have been variously christened "Indian summer."—From "The Gulf Stream Myth and the Anti-Cyclone," by Harvey M. Watts, in the June Scribner's.

LOCAL INSPECTORS' INTERFERENCE.

IN THE event of the Local Inspectors of Steamboats cancelling licenses by wholesale as they are so pleased to threaten, would it not be a just and equitable reprisal to proceed against them individually for conspiring to injure and delay lake commerce? Each temporary revocation or permanent cancellation of a licensed officer's ticket, enhances the value of live licenses, and to that extent creates a demand for skilled labor in excess of the supply. Furthermore, with a majority of the licensed tugmen disrated to deck hands, who is to carry on their work as formerly? The impression is abroad that there are not too many skilled handlers in the towing service at lake ports at the present time, so that the general disrating of experienced men would be as bad or worse than the present conditions, and might extend over future seasons. We have no desire to take sides in this matter of disagreement between the owners and crews of one hundred lake tugs, and our expression of opinions relate in the main to the apparently arbitrary action and assumed authority of Local Inspectors of Steamboats. As a matter of fact, or rather as the question appears to us, the disagreement rests solely between labor and capital, employer and employe, and to threaten the revocation of a man's license, coupled with government interference, through the obstinacy and prejudices of Local Inspectors seems a method of procedure utterly uncalled for under the conditions.

SUBMARINE CRAFT NOT FULLY ENDORSED.

Rear Admiral Charles O. Neill, Chief of the Bureau of Naval Ordnance, has submitted to the House committee on naval affairs, a memorandum concerning the value and functions of submarine boats in which he says that he still regards craft of the Holland type as experimental, whose utility for efficient service has yet to be demonstrated. He continues:

"I am fully convinced that the government would not be justified in providing for any new boats of this type until those now under contract have been completed, accepted and thoroughly tested, and until the Navy Department is thoroughly satisfied as to their utility."

He contends that the science of submarine warfare is still in its infancy, and that the door should be thrown open to other inventors of this kind of craft. He suggests, therefore, that \$500,000 be appropriated to contract for such submarine boats, of other types, as in the naval secretary's judgment are best calculated to meet the requirements of the service; the object being to encourage builders and designers to compete with each other in the further development of such craft.



PORT HURON.

The Bureau of Navigation, Treasury Department, Washington, D. C., has granted an official number to the steamer Edward P. Recor, 368 gross and 232 net tons, built at Marine City, and hailing from this port.

The steamer Wilkesbarre, Capt. H. Driscoll, of the Lehigh Valley line, bound to Duluth with coal, stranded on the upper end of Michipicoten Island, in Lake Superior. She neaped three feet on a bottom which is covered with boulders. The news of the accident reached Sault Ste. Marie and assistance was at once sent to her.

The title to a stretch of beach in front of Gratiot Beach is involved in a suit commenced by R. J. Cram, of Detroit, against Marcus Young. Mr. Young has been digging sand and gravel in front of Mr. Cram's lots, claiming that he has the right to take the same. Mr. Cram asserts that when he made the purchase, he bought to the water's edge. The suit will involve the title of other beach property. Recently the front of the park was in dispute, and the city had to pay \$10,000 for the same. This suit is of a similar nature.

Edward J. Kendall, the pioneer marine reporter of this city, died at the hospital on Tuesday. For several years Mr. Kendall had been suffering from acute stomach and liver troubles, and had undergone several operations. A few days ago he was again operated upon in the hope of getting relief, but he failed to rally. Edward J. Kendall was one of the best known marine men on the chain of lakes. He had been in the reporting business at Port Huron for the past fifteen years, but had been associated with the vessel interests of the lakes practically all his life. He enjoyed the confidence and esteem of all the vessel owners and captains in his acquaintance, which was large. Mr. Kendall is survived by a widow and three children.

The plans of the Botsford, Jenks & Duncan Co., of this city, for the development of a freight carrying enterprise in connection with the Grand Trunk Railway system for the transporting of grain and other products from the upper lake ports to the seaboard and the foreign markets, which it was thought would be consummated by the close of the present season, are temporarily in abeyance on account of a hitch in the negotiations between the Port Huron promoters and the Grand Trunk Railway Co. Owing to the scarcity of structural steel the Port Huron firm some time ago notified the railroad company that they would be unable to build and complete the proposed big steel elevator at Point Edward, which was to have been an important link in the proposed scheme, by Sept. 1 next as per agreement, and asked for an extension of time. The Grand Trunk also desired some changes in construction, over which no agreement was reached. As a result of the failure of the two interests to come together nothing has so far been done regarding the elevator except the grading of the site for its location. Upon the Port Huron company not proceeding with the work at the time appointed the Grand Trunk, it is understood, sought to interest Sarnia capital to some extent in the construction of the elevator, but their efforts in that direction were fruitless, and it is said that the negotiations with Messrs. Botsford, Jenks & Duncan will be resumed. Mr. F. D. Jenks, when spoken to in relation to the affair, said that while the elevator work was suspended for the present the deal was not off, and that negotiations were still progressing which were thought would result satisfactory. The hitch in the construction of the elevator has not interfered any in the package freight carrying arrangement the company has with the Grand Trunk, and its boats in this line are plying regularly between Port Huron and Lake Superior ports. The company is also proceeding with the work of construction of its steel ship building plant, located just north of St. Clair, where it proposes to build its own fleet of boats.

CHICAGO.

The schooner Ralph Campbell, 226 gross tons, built at Cleveland in 1855 and owned by Dreiske, et al. of this port, is classed Br, and valued at \$1,500. This is an indication of how they built wooden vessels half a century ago in Ohio. The Campbell was quite a schooner years ago, and rated among the latest, largest and best in her early days.

The steamer Chili stuck on the crown of the La Salle street tunnel on Sunday, and when released, went on the south bank of the river near the Lake street bridge. In attempting to avoid her the steamer Vega ran into the abutment of the bridge, smashing 20 feet of timbers, between the tunnel crowns and the current caused by the drainage canal it is becoming unsafe to do business with

any size of a craft in the river, especially now when the tug service is crippled on account of the strike or lock out by the Great Lakes Towing Co.

Dredging the channel connecting Black Lake with Lake Michigan at Macatawa Park and Ottawa Beach has been begun, and it is expected that the Graham & Morton line will be able to handle its boats in that harbor this week. At present the side-wheelers which usually run on the Benton Harbor and St. Joseph route are being run to Holland and the resorts.

The passenger and cargo steamer City of Charlevoix, Capt. W. Richardson, owned by the Northern Michigan line and trading from Chicago, stranded on South Point Reef, two miles from Charlevoix, on Monday, during thick weather. Prompt and adequate assistance released the vessel a few hours after stranding, although she was on a rocky bottom and a somewhat exposed position.

Capt. B. F. Rounds, one of the oldest masters on the lakes, died at Benton Harbor, on Wednesday, aged 77 years. His experiences on the lakes date back into the first half of the last century, for he sailed on the Lady of the Lake, plying between Cape Vincent, N. Y., and Kingston, Ont., as early as 1842. Later he became master of the Fountain City. In 1855 she was one of the largest vessels on the lakes between Buffalo and Chicago.

Capt. Edward Mullen, owner of the schooner Commerce, and a pioneer navigator of the lakes, was drowned on Sunday night, while attempting to run the kedge anchor from his schooner, which had stranded on Tin shoals. Capt. Mullen, with two sailors, got into the yawlboat to run the kedge anchor in order to save the schooner from pounding. The boat was capsized and Capt. Mullen was drowned before assistance could reach him. The sailors were rescued with great difficulty. Mrs. Mullen was on board the schooner, and became frantic with grief when she saw that her husband could not be saved. The Commerce was bound here with a cargo of telegraph poles. After the recovery of the Captain's body the schooner proceeded. The Commerce, 327 tons gross, was built at Sandusky in 1857, is still on her first letter and rated at a valuation of \$4,500.

More and more troubles for vessels are being experienced in the river each week. Last Saturday the steamer Chili, with 140,000 bushels of flaxseed stuck for four hours on the crown of the La Salle street tunnel. After being released the steamer, in straightening up below Lake street bridge, was caught in the current and swung against the south bank of the river. All traffic to the south branch of the river was blocked for an hour. She later proceeded up stream. At the time the Chili went on the tunnel the steamer Vega, in attempting to pass through Lake street bridge, was caught in a squall and swung fifty feet out of the channel. The Vega tore away the protection of the north abutment of the bridge and smashed through twenty feet of timbers about the city's bridge supply house. Later she passed safely into the south branch.

The Great Lakes Towing Co. has started two tugs at South Chicago, employing non-union men to run them. The tugs were the Monarch and the George E. Nau, two of the most powerful tugs on the lakes. Two policemen were placed on each boat to protect the non-union men from strikers. For the present these tugs will be engaged exclusively in towing the United States Steel Corporation's boats. They will not go outside of the protection of the Illinois steel plant except to tow boats in and out. The only way the strikers or their sympathizers can get to the crews of the tugs will be by water, for the barricades of the Illinois Steel Co. will stop everybody coming by land. Since the tug strike began the steel trust had been compelled to keep one of its smallest steamers on duty at South Chicago to aid in handling its big steamers and barges. The tugs will now replace the steel trust steamers in this towing.

Thirteen tug captains and as many engineers, formerly employed by the Great Lakes Towing Co., were formally cited to answer charges preferred by President C. W. Elphicke, of the Dunham Towing and Wrecking Co., of Chicago, and President T. F. Newman, of the Great Lakes Towing Co., that the tugmen were conspiring to hinder commerce on the great lakes, by failing to man the tugs of the company. The affidavit and charges of President Elphicke covered nine closely written pages, and was followed by an affidavit of President Newman, in which the latter recited in three pages the demands made by the grand grievance committee of the L. T. P. A., in regard to the hours of rest and labor at Cleveland, that the wrecking tug Favorite be unionized, and that the non-union captain and engineer of the tug Martin, in the Detroit river, be replaced with union men. It also recited that Grand President McCarle had asserted that the L. T. P. A. would stand by the firemen and linemen's organizations until a settlement with both was made. The charges also included the statement that less than twenty tugs of the Great Lakes Towing Co., out of the total of over 100, were in service. The tugmen say that their only answer is that they were discharged by the Great Lakes Towing Co., and notified that they could come back to work when the trouble was settled. They assert that they have been ready to take out their tugs as soon as the latter could be manned, and that they are still ready to do their share in operating them.

BUFFALO.

No decision is expected this week in the high treason, conspiracy, tug boat cases. The local Hull Inspector and the local Boiler Inspector are still taking evidence, after which attorneys will plead their cases pro and con, after that—the deluge!

The receipts of lumber and iron ore last week were the heaviest in the history of the port, amounting to 10,257,655 feet of lumber and 77,827 tons of ore. Grain receipts were 3,483,698 bushels and 276,116 barrels of flour, the equivalent of 1,380,580 bushels of wheat were also received.

The May shipments of coal only amounts to 56,000 tons and only two small cargoes were shipped last week, making a total of 2,160 tons, 600 tons of which was bituminous for Port Colborne, the other cargo going to Ashland. Anthracite is not a bit scarcer than soft coal and there is no surplus of either.

The following meteorological observations are furnished by the Office of the U. S. Weather Bureau, Buffalo, for the week ending June 4. Prevailing wind direction for the week, S.W.; highest velocity 49 miles, from the S.W. on the 30th; mean temperature for the week, 64°; highest temperature 84° on June 1; lowest, 54° on May 31.

There is a considerable amount of lumber to be forwarded from the Tonawandas by the Erie canal, but the shippers do not expect any inconvenience from the shortage of canal boats, as the present scarcity of boats is considered temporary. It is expected that a large number of boats which loaded lumber earlier in the season will arrive within the next few days.

The first gasoline launch to be constructed in the yards of the Buffalo Dry Dock Co., if not in the city, will be ready for service in a few days. The launch is constructed throughout of steel, and is 30 feet long, with a 9 ft. 6 ins. beam, and equipped with a 12-h.p. four-cycle, single-cylinder motor. She is being built for the use of the company's superintendent in and about the harbor.

The New York Central and the Niagara Navigation Co. have inaugurated the excursions from Buffalo to Toronto. The trains leave Buffalo at 9 o'clock in the morning and 4:15 in the afternoon. At Lewiston they connect with the Niagara boats and complete the trip to Toronto. At the present time there is but one boat running, the Chicora. She leaves Toronto twice a day and Lewiston the same number of times. The route takes in the upper portion of Niagara river and a stretch of nearly thirty miles of Lake Ontario.

The new side-wheel steamer Eastern States, the pioneer of the Detroit & Buffalo line of passenger steamers, arrived here on Tuesday. Mayor William C. Maybury and a number of prominent citizens of Detroit were on board. The new craft had a rousing reception from the vessels and elevators in the harbor. Twenty-five hundred people went on the complimentary trial trip of the new steamer, and as many more inspected the vessel during the evening. The Eastern States will make tri-weekly trips until June 16, when a daily service will be inaugurated, the Western States another new vessel being put in service.

In the tugmen's conspiracy case adjudged as conspiring together to interfere with and delay general lake commerce, nine witnesses were examined on Tuesday, and the investigation is likely to take up the balance of the week. The hearing is behind closed doors, and none of the evidence is given out. Sane men are asking themselves and others, what sort of a court is this anyway, with its star chamber sessions. If there is any infraction of the United States statutes the cases should be heard in a United States court and not before Vessel Equipment Inspectors. However, after they get through their mummery p'raps Capt. James Stone, the Supervising Inspector of the district, stationed at Cleveland, may be asked to give his notions in the matter, then, after a while, some proper jurisdiction may be reached.

Additions to the June supplement of the Inland Lloyds Vessel Register. Capt. A. B. Drake, Chief Inspector, are somewhat over the average. The side-wheel steel steamers Eastern and Western States, built at the Wyandotte yards of the Detroit Ship Building Co., for the passenger and freight service between this port and Detroit, are, of course, given an A1 rating, with a valuation for insurance purposes of \$650,000 each. Their tonnage is 3,077 gross. This would show a cost of \$211 per gross ton, the net tonnage is probably about 50 per cent. or one half less than the gross. An original cost of upwards of 1¼ million dollars for these two new boats shows great faith by the investors, in the future of the sure to be a successful line between here and Detroit, and will make the railroads wince, as long as their control is kept out of the hands of the Lake Shore R. R. Co. Other new steamers are the steel cargo steamers Wm. F. Fitch, 3,629, also built at Wyandotte for the Franklin Transportation Co., Fairport, O., and classed A1, with a valuation of \$200,000 or \$55 per ton. The steel cargo steamer James Gayley, 4,777 tons gross, built at the Lorain yards of the American Ship Building Co., to the order of the Cleveland Steamship Co., Fairport, O., and rating A1 with a valuation of \$265,000. The steel steamer Milwaukee, built at the South Chicago yards of the American Ship Building Co., to the order of the Western Transit Co., Buffalo.

DETROIT.

The new passenger steamer Greyhound made a successful trial trip on Wednesday morning. The officers were highly pleased with the steamer's performance.

The mail boat Florence B. handled the biggest day's business of the season last Friday. Over 2,000 pieces of mail were handled, and the total number of vessels reported was 140.

The steel cargo steamer L. C. Smith, 4,744 gross and 4,139 net tons, built at West Bay City, and hailing from Port Huron, has been granted an official number by the Bureau of Navigation, Treasury Department, Washington, D. C.

The steel side-wheel passenger steamer Greyhound, 1,392 gross and 748 net tons, built at the Wyandotte yards of the Detroit Ship Building Co., and hailing from this port, has been granted an official number by the Bureau of Navigation, Treasury Department, Washington, D. C.

The schooner Canton was libeled by her crew for work done in lightering the boat when stranded near Point Pelee. The men demanded 45 cents per hour for their work. They were offered 40 cents. It is unfair that the men have been so ill advised, as no extra pay can be secured for efforts expended in endeavoring to save their own vessel.

Word was received here on Tuesday, of the sinking of the Canadian barge Gleniffer, which was in tow of the tug Seaman, by an unknown steamer in the St. Clair river, just above the flats. Mrs. C. Moore, wife of the Gleniffer's captain, was drowned, and Archie Mysner, of Windsor, Ont., one of the crew, is missing, and is supposed to have been lost also.

E. B. Clark, who for the past four years has been district freight agent at Pittsburg for the Great Northern railway, has assumed charge in the Northern Steamship company's office in Detroit, left vacant by the resignations of Robt. S. Hart and C. B. Dean. The handling of the Northern line's business over the Anchor line's dock allows the two former positions to be combined.

From a source whose authority to speak on the matter cannot well be questioned, it has been learned that for several weeks past the Michigan Central railroad and the Vanderbilt interest have been looking into the new Detroit & Buffalo Steamboat Co., and there is a possibility that before a very great length of time negotiations looking toward the acquisition of the new line will be opened.

The new steamer Western States made her trial trip on Wednesday afternoon. Her sister ship, the Eastern States, arrived from Buffalo at noon, having made her run from dock to dock in 15 hours and 30 minutes, an excellent showing for the first trip, and averaging about 19 statute miles or 16 knots an hour all through. This speed will be tested by about one mile an hour after a few trips.

The creditors of the Detroit Boat Works will realize about 25 cents on the dollar. The receivers, the Detroit Trust Co., has filed a report, showing that the boat works' debts amount to \$25,643.84. There has been expended thus far by the receiver the sum of \$3,826.63, and the Detroit Trust Co. asks for \$1,200 for its services as receiver. The plant and all the property of the boat works brought only \$11,531.91 at receiver's sale.

"I am pleased at the firm stand which the lumber carriers have taken in the matter of freights," said President William Livingstone, of the Lake Carriers' Association. "If the lake carriers had taken the same stand when navigation opened, I believe that our freight rates would have been much nearer where they should be. I like the stand that the lumbermen have shown. I wish we had some of it in our organization. When the rates were so low in April I wanted our boats to be kept in port, and considered that it would be proper to keep them in when May arrived if necessary. There never was a time when expenses have been so high and the freight rates are very much too low. You cannot get steel to build a boat for love or money—wages are high, coal is high; in fact everything connected with a boat but the freight rates is away up."

On Monday the tug Holden was started to work at Port Huron, which puts fourteen ports in operation with the boats of the Great Lakes Towing Co. A report says that a tug is to be started at South Chicago. Excluding the latter place, the company now has fourteen ports in full swing, and three which have a partial list of tugs. The latter three represent principal centers of the lakes, Cleveland, Chicago, and Duluth. The progress made by the company has been somewhat mystifying to the officers of the L. T. P. A. Some of the men engaged have been former members of the association. Now that they have deserted, they have lost their affiliation with the lodge. The desertion is in too small numbers to have any effect upon the general organization, since only 10 per cent of the members of the L. T. P. A. work for the Great Lakes Towing Co., but the prediction is made that the growing alienation between the tugmen employed by the trust and the lodge proper will eventually end in the organization of a tugmen's lodge, strictly for the men in the towing business, and thus draw together a closer organiza-

tion. Detroit has never been considered a factor in the disagreement between the Great Lakes Towing Co. and its tugs at all prominent lake ports.

The yacht Gladys, of New York, reached here last week from her home port via the canal by easy stages, and with long and frequent stops at points of interest. The owner, Mr. Benjamin Dodson, and a party of six were on board. The trip will be continued to Duluth and there the yacht will be shipped by rail to Puget Sound, where Mr. Dodson is said to have large business interests. The Gladys is a handsome craft, 75 feet in length and fitted as a cruising yacht.

With the memory of the Erie-Tashmoo race of last summer in mind, many persons are wondering what the speed capabilities of the Eastern and Western States will show up on Lake Erie, and whether they can beat the City of Erie. The City of Erie is 320 feet long, 76 feet beam over the guards, and draws 12 feet. She has six boilers with Howden draft, and an engine of 4,500 horse-power. The new boats are 366 feet long, 80 feet beam over the guards, and 12 feet draft. They have six boilers, each a foot larger in diameter than the Erie's carrying 10 pounds more steam, fitted with the Howden draft, and an engine of 5,000 horse-power. The above figures are what the engines are designed to do with normal steam pressure and number of revolutions per minute. The instant pressure of revolutions is increased, the horse-power is correspondingly raised. In the Erie-Tashmoo race, the Erie's engine, designed for 4,500, ran up to 6,800, while the Tashmoo's engine, normally 2,500, indicated as high as 3,240. Naturally, the man who designed all these boats is the best judge of them, and his opinion is of the greatest interest. Mr. Kirby said: "Yes, the Eastern States and Western States should beat the Erie. Why? Because they are larger and more powerful boats. Speed in boats is largely a question of horse-power, and to produce a given speed the ratio of horse-power to tonnage grows less as the size of the boat increases. For instance, there used to be a little boat around here called the Dawn. She had ten horse-power to the ton, and the Erie has only two, yet the Dawn was no faster than the Erie. The proportion of horse-power to tonnage on the new boats is nearly the same as on the Erie, the slight difference being in favor of the new boats, but the latter are much larger boats, and with the same ratio of horse-power to tonnage should beat the Erie."

CLEVELAND.

The steamer Arrow, which has been making semi-weekly trips between Cleveland and Sandusky for a number of years, opened her season this week.

Capt. L. Laverage will take the steamer Minnewaska to the coast. The first section will probably leave for Montreal, via the St. Lawrence system of canals, on Saturday.

When coming down the river on Wednesday, the new steel cargo steamer Bransford, Capt. James Owen, of the Hawgood Line, swung into the tug Pensaukee, and smashed up the hull of the little tug.

Lieut. Sabri, official representative of the sultan of Turkey, visited here this week. He is inspecting the new battleship being built by the Cramps for the sultan, and had been to Barberton, O., where The Stirling Co., Chicago, are manufacturing the batteries of Niclausse Water Tube Boilers for the new battleship.

The new steel steamer Jupiter, Capt. F. A. Graves, loaded with iron ore, mistook the lights in a farm house about two miles west of Ashtabula for the harbor range lights, and stranded on Sunday night. After getting plenty of assistance and jettisoning several hundred tons of cargo she was floated and towed into Ashtabula on Monday night. The Jupiter is in the Gilchrist fleet, and valued at \$205,000.

Capt. Dahlke made a proposition to the Great Lakes Towing Co., to charter all of the boats in this harbor for the balance of the year at \$12,000. It was said that he intended to hire all union men and to put on two crews. It was further said that the plan had received the commendation of President McCarle, of the L. T. P. A. President Newman, of the Great Lakes Towing Co., wiped this feature out of existence by saying that the offer would not be noticed.

Last Tuesday afternoon one of the best known engineers on the lakes and one of the most estimable citizens on the West Side, Mr. Samuel A. Wells, departed this life. For 37 years Mr. Wells, whose funeral was held Thursday from his late home, at 172 Clinton street, was a chief engineer, last season in the Roman. He leaves behind him a large number of sorrowing friends. Among his bereaved relatives was his son-in-law, Clifford Williamson, the well known bondsman.

The Onoko, Capt. W. H. Johnson and Chief Engineer F. A. Morrill, became disabled off Pelee Island, on Wednesday, while bound from Lorain to Lake Superior, with a cargo of coal. The connecting rod broke, and the high pressure cylinder was wrecked, she will be brought here for repairs. The Onoko is an iron steamer, 164 gross tons, owned by the Minch & Nicholas Trans. Co., Cleveland. She was built at this port in 1882, and has always been a very fortunate craft, also a money earner. The Onoko is still rated A1, with a valuation for insurance purposes of \$120,000.

The steel steamer Jupiter is expected here to-day, to be dry docked, surveyed and final repairs made after her stranding near Ashtabula harbor, between 600 and 700 tons of ore was jettisoned from her 5,000 ton cargo before she was floated.

Hon. S. E. Williamson, executor of the estate of the late W. J. Gordon, sold yesterday to W. J. Farasey, the wharfinger, forwarder and vessel agent, 152 feet of property fronting on East River street. The property will be used for dock purposes. The sale price was given at \$23,000. It is understood that this is the property already occupied by Mr. Farasey under an agreement with the estate, and he has just completed the payment for it, and will take over full ownership.

The following meteorological observations are furnished by the Office of the U. S. Weather Bureau for the week ending June 4th: Prevailing wind direction for the week, S.W.; highest velocity, 20 miles from the west on the 4th; mean temperature for the week, 67°; highest temperature, 85° on the 2nd; lowest, 40° on May 29th. Sunrise and sunset date computed for local time; June 6th sun rises, 4:24; sets, 7:32; June 9th, sun rises, 4:23; sets, 7:34; June 12th, sun rises, 4:23; sets 7:35.

The local officers of the Licensed Tugmen's Protective Association succeeded this week in getting the engineer's crew of the tug Cascade, at Lorain, to quit work. The engineer, who is C. C. Smith, turned his contracts with the Great Lakes Towing Co. over to the officials of the association, and said he would not do any more work until a settlement of the trouble was reached. The officials of the association say they are hard at work and expect to get more licensed men to quit during the next few days. Capt. Brockaway, who came here from Chicago to take one of the trust tugs at this port, after talking with the local men refused to work and returned home.

The Great Lakes Towing Co. started the tug Kennedy to work this week. The crew are employed by the Great Lakes Towing Co., under a two years' contract, the other ten tugs are still in the slip awaiting the signing of crews. The officers of the company are employing union men from the masters' and pilots' organization, and engineers from among the members of the Marine Engineers' Beneficial Association. This fact gave rise to the report of friction between the different labor organizations, but it is said to be nothing more than a difference of opinion. The action before the Local Inspectors of steamboats, wherein the tugmen are cited for conspiring to injure lake commerce, is where it left off last week, as the inspectors have been too busy looking after the proper equipment of steamers to continue taking evidence, or to hold court.

As regards iron ore shipments and receipts the Iron Trade Review says that "Returns from the upper lake ore docks for May shipments of ore are not entirely complete, but it is evident from those received that the estimates based on the April rate of shipments were quite too high. It was thought that an April record of 1,854,902 tons pointed to May shipments close upon 4,000,000 tons, but the total, it is now certain, will fall far short of this. The car shortage and the consequent delays at Lake Erie docks in May were an unexpected complication. The anthracite strike might be expected to bring more cars to the lake ore trade, but little is to be expected from this source, as soft coal must now be sent East, and the long haul required will keep the supply of coal cars quite well occupied. Some little betterment is noticed at Lake Erie docks this week, but there is no guarantee of its continuance. If the May troubles are duplicated in mid-summer experience it is not likely that any such increase over 1901 ore shipments will be scored as has been predicted in some quarters."

CONTINUED ON PAGE 11.

A HINDRANCE OF COMMERCE IS CLAIMED

An investigation of the charges brought by the Great Lakes Towing Co., against twenty-five members of the Licensed Tugmen's Protective Association at this port, was begun by the Local Inspectors of Steamboats, Pope and Schumacher, on Monday morning. Frank Masten of Cleveland, and Harvey L. Brown, of Buffalo, represented the tug company, and George S. Potter, of this city, appeared for the employees. The complaint filed by the Great Lakes Co. sets forth that because certain demands made by President McCarle, of the Tugmen's Union, had been refused by the company, a strike was ordered May 8, which is still in force. As the company, on account of the strike, is able to operate only fifteen tugs out of the hundred comprising its fleet, a conspiracy to the hindrance of commerce is claimed. Attorney Potter asked for a dismissal of the charges on the ground that they do not constitute cause for procedure under section 4,449 of the revised statutes; that they are vague, indefinite, and frivolous; but his request was denied. To-day was devoted to the examination of witnesses and an adjournment was taken until to-morrow morning. The inspectors absolutely refuse to give out any information concerning the proceedings, and the attorneys are similarly reticent. President T. F. Newman and General Manager Sinclair, of the tug company, are in the city, and it is believed an effort will be made to effect a settlement. The ban placed by the striking tugmen on certain boats was removed, and the independent company was given permission to tow anything. Ten per cent. of its earnings go to the local lodge of Licensed Tugmen.

UNCERTAINTY OF VOLCANOES.

The following interesting article on volcanoes by Professor Henry S. Williams, Silliman professor of geology in Yale University, specially written for the Pittsburg Sunday Gazette, will be of interest at this time in view of the awful effects of these destructive agencies in the West Indies and Mexico. "Really there is absolutely no telling what volcanoes will do. They are not well understood by anyone, for the laws upon which they operate are not well known. There are certain signs by which experts can tell within a comparatively short time what some of them are likely to do, but in the instance of some other volcanoes they may break forth without any warning at all.

"Speaking only from what I have read of the recent eruption in Martinique, and from what we know geologically, and historically of the region, I am of the opinion that inasmuch as there was more than one eruption, it appearing that there was also one on St. Vincent, there will be no immediate successive eruption. The tendency will be to subside, now that some relief has been offered the volcanic forces beneath the surface.

"But eruptions sometimes come in series. Then, too, it may be that the two volcanoes which are still more or less active, Souffriere and Mont Pelee, work somewhat as Mount Vesuvius and Mount Etna have been known to work, the one inactive while the other emits more or less violently.

"A volcanic eruption is, on a grand scale, an explosion, caused by the generation of steam in the great boiler under the surface. I am of the opinion that there were some great crevices in the vicinity of the island of Martinique, through which water either percolated for many years or by the subsiding of the sea a great inrush of water took place. The fact that the sea is said to have sunk a number of feet there would seem to indicate that there is a very great crack or crevice somewhere and that the water that rushed in was great in volume. That produced a generation of steam which found vent through the craters of the two volcanoes.

"Out in our own Yellowstone Park the geysers are instances of this steam generation. The volcanoes there have not been active for thousands of years, but the earth has not cooled very far down yet and the steaming water that spouts out and up is in the nature of its action volcanic. In Mexico not very long ago there was one volcano long inactive, upon which the rocks were still so hot that one could light a cigar by touching the end of it to the stone.

"The modern scientific theory of the emission of lava is simply that the tremendous pressure upon the rocks, down a few miles, is so great that despite the intense heat they are kept not quite molten, almost solid, perhaps.

"When the explosion takes place, relieving the pressure, it happens oftentimes that the rocks turn from their solidified state to a molten condition. Men spoke of the red-hot mud that poured down the mountain. When that matter comes to the cooler air at the surface, especially if there is water with it, it is broken up into fine particles by atmospheric influences and falls for great distances in the form of what people have described as ashes. They are not ashes, however, but particles of lava.

"As to whether there will be a sympathetic action of volcanoes in other parts of the world, I rather doubt that. I think the easement is local, as was the disturbance, and that there will be no effect at any great distances. The thunder and lightning which accompanied or followed the eruption in Martinique were due to the fact that the tension of the electric forces in the air was disturbed. The disturbances in the center of the earth being very great and having an upward tendency in relieving, there follow great changes in the configuration of the territories. Great masses of rock slide and the earth opens. That is an earthquake effect. It is possible that those effects are felt at great distances.

"Volcanoes are peculiar in their action. We really know but little about them. Scientists collect all data possible and study them carefully, but unfortunately it is not possible to study them in action with safety. You know, down at the bottom of the rich Comstock lode, the atmosphere is still so hot that it costs more to cool the air than the gold is worth when mined, and volcanoes have not been active in our country for a long time."

REFUSING A GRATUITY.

Capt. McCormick, of the life-saving station at the Portage Lake canal, has refused a check for a handsome sum, tendered him by the father of Abel Levine, a University of Michigan graduate drowned in Lake Michigan in Marquette county, last fall, and whose body was recovered by McCormick and a few of his men after a search of several days. At the time of the fatality four boys—two Carlsons and two Levine brothers—were lost, and ever since there has been a standing reward of \$500 each for the recovery of the bodies. Since last December Mr. Levine has alone spent \$2,500 in dragging the lake, but without success, although now the bodies of both the Levine boys have been recovered, one being found in the ice during the spring break-up, and the other being located by the life-savers a few days since, partially buried in the sand at the bottom of the lake. No trace has yet been found of the Carlsons, but it is known that both were drowned.

RECOGNITION FOR SAVING LIFE AT BUFFALO.

Mayor Knight, of Buffalo, on behalf of the United States Volunteer Life-Saving Corps, on Thursday last, presented George E. Walper, steward at the Buffalo Yacht Club, with a medal for having saved the life of Mrs. Alvina Kroviak.

Mrs. Kroviak tried to drown herself in the Erie canal at the foot of Porter avenue, on the morning of May 2, 1901. Walper imperiled his life when he rescued the woman.

Among those who attended the presentation were Capt. F. H. Dustan and Lieut. A. E. Leighton, of the United States Volunteer Life-Saving Corps, who were in Buffalo establishing and equipping life-saving stations.

The letter to Mr. Walper from President Jones follows: U. S. Volunteer Life-Saving Corps (Inland waters), Department of New York. World Bldg., New York, May 24, 1902.

Mr. Geo. E. Walper, Buffalo, N. Y.:

Dear Sir—Your heroic conduct in rescuing from drowning Mrs. Alvina Kroviak, of No. 148 Lovejoy street, Buffalo, N. Y., on May 2, 1901, having been properly certified and approved by our commanding officer, Capt. Robert E. Magner, of Buffalo, our board duly awarded you a medal of honor, which I take great pleasure in forwarding to you with this certificate. Trusting it may inspire others to like acts of bravery. For the board.

Very truly yours,

J. WESLEY JONES,
President, U. S. V. L. S. C.

(Gold Seal of Corps.)

ASTRONOMICAL NOTES FOR JUNE.

Astronomical data for June, 1902, furnished the MARINE RECORD by the Washburn observatory:

Mercury is an evening star and may still be seen the first part of the month after sunset, over the northwest horizon. The planet passes through inferior conjunction June 23d, when it ceases to be an evening star. The remaining bright planets are seen in the morning sky. Mars rises shortly before the sun, and at nearly the same point of the horizon. Venus, the brightest of all, is the morning star; but the planet is approaching the sun and diminishing in brilliancy. Jupiter, the next most brilliant of the planet stars, is seen near the meridian by dawn, far south; and Saturn precedes it on the meridian about an hour, still lower in the sky.

The times of sunrise and sunset at Milwaukee for the month are as follows:

	SUNRISE	SUNSET.
June 1	4:15	7:23
June 11	4:12	7:30
June 21	4:12	7:34
June 30	4:15	7:35

The times of the moon's phases are:

New moon	June 6	12:11 a. m.
First quarter	June 12	5:54 p. m.
Full moon	June 20	8:17 p. m.
Third quarter	June 28	3:52 p. m.

The principal fixed stars visible in the evening hours during the month are:

To the west, Regulus. Near the meridian, Arcturus and Spica. To the east, Antares and Vega.

UNITED STATES SHIPBUILDING RETURNS.

TREASURY DEPARTMENT, OFFICE OF THE COMMISSIONER OF NAVIGATION, May 31, 1902.

The Bureau of Navigation reports 126 vessels of 34 139 gross tons were built in the United States and officially numbered during the month of May, 1902, as follows:

	WOOD.				STEEL.				TOTAL.	
	SAIL.		STEAM.		SAIL.		STEAM.			
	No.	Gross.	No.	Gross.	No	Gross.	No.	Gross.	No.	Gross.
Atlantic and Gulf.....	36	664	29	1,172	2	315	8	3,743	75	5,894
Porto Rico										
Pacific	4	2,311	18	2,273					22	4,584
Hawaii										
Great Lakes.....			6	840			8	22 059	14	22,899
Western Rivers			13	746			2	16	15	762
Total.....	40	2,975	66	5,031	2	315	18	25 818	126	34,139

The largest steel steam vessels included in these figures are:

NAME.	GROSS TONS.	WHERE BUILT.	OWNER.
James Gayley	4,777	Cleveland, Ohio	American Ship Bld'g. Co.
L. C. Smith	4,744	W. Bay City, Mich.	W. Bay City Ship Bld'g. Co.
Eastern States	3,077	Wyandotte, Mich.	Detroit Ship Bld'g. Co.
Western States	3,077	"	"

The foregoing figures do not include craft without motive power of their own. From other sources than construction 3 vessels of 2,893 gross tons, were added to the merchant fleet, the principal ones being:

RIG.	NAME.	GROSS TONS.	WHY OFFICIALLY NUMBERED.
Sch.	Guardian.	123	Foreign Wreck.
Bk.	Homeward Bound.	2,131	Act of Congress.
S. S.	Jessie Banning.	639	Foreign Wreck.

The Bureau of Navigation reports 1,198 sail and steam vessels of 363,638 gross tons built in the United States and officially numbered during the eleven months ended May 31, 1902, as follows:

	WOOD.				STEEL.				TOTAL.	
	SAIL.		STEAM.		SAIL.		STEAM.			
	No.	Gross.	No.	Gross.	No.	Gross.	No.	Gross.	No	Gross.
Atlantic and Gulf.....	526	59,332	244	16,766	7	9,184	54	74,285	831	159,567
Porto Rico.....	2	34							2	34
Pacific.....	43	24,756	77	9,245			2	10,707	122	44,708
Hawaii.....			1	13					1	13
Great Lakes.....	6	161	55	3 013			47	148,435	108	151,609
Western Rivers.....	6	114	123	7,392			5	201	134	7,707
Total.....	583	84,397	500	36,429	7	9,184	108	233,628	1,198	363 638

During the corresponding eleven months ended May 31, 1901, 1,024 sail and steam vessels of 397,789 gross tons were built in the United States and officially numbered, as follows:

	WOOD				STEEL.				TOTAL.	
	SAIL.		STEAM.		SAIL.		STEAM.			
	No.	Gross.	No.	Gross.	No.	Gross.	No.	Gross.	No.	Gross.
Atlantic and Gulf.....	414	69,001	175	10,314	9	10,320	42	80,250	640	169,885
Porto Rico.....										
Pacific.....	50	23,991	79	10,044			6	7,607	135	41,642
Hawaii.....										
Great Lakes.....	6	116	40	4,824	5	11,236	42	121,757	93	137,933
Western Rivers.....	57	1,054	98	8,713			1	562	156	10,329
Total.....	527	94,162	392	33,895	14	21,556	91	210,176	1,024	359,789

QUARTERLY WRECK AND CASUALTY REPORT.

We have received this week a copy of the Meteorological Chart of the Great Lakes, No. 1, 1902, by Alfred J. Henry, Washington, and Norman B. Conger, marine agent, Detroit, prepared under the direction of Willis L. Moore, Chief U. S. Weather Bureau, Department of Agriculture. The following list of wrecks and casualties with the resultant loss to life and property is also represented in chart form as well as in type. The loss amounts in property are all estimated:

January 17, steamer P. M. 3, stranded at Ludington Harbor during westerly gale, was released after lightering cargo and towed to Milwaukee for repairs; damage to vessel, \$50,000.

March 30, Schooner Annie O. Hanson, stranded near the Manistee piers during heavy northwest gale and became a total loss; crew rescued by life-savers; value of vessel, \$2,500.

April 5, schooner Annie M. Peterson, broke away from towing steamer during heavy northwest gale and snowstorm, and stranded 12 miles west of White Fish Point, Lake Superior; damage to vessel, \$3,000; cargo, \$3,000; released.

April 6, steamer McNeff, stranded in South Manitou Harbor, Lake Michigan, during heavy northwest gale and snowstorm; was released without damage.

April 7, steamer Van Hise, stranded at Lafayette Point, Bois Blanc Island, Lake Huron, during heavy northwest gale with snow; damage to vessels, \$3,000; cargo, \$1,800; released.

April 8, steamer La Salle, stranded at White Shoals, Lake Michigan; damage to vessel, \$2,500; released.

April 9, steamer Argo, stranded on rock at Outer Island, Lake Superior, during dense fog and stove hole in bow; damage to vessel, \$500; cargo, \$800; released.

Steamer Crescent City, with barge 130 in tow, stranded at Au Sable Point, Lake Superior, during dense fog; damage to vessel, \$2,000; released.

Barge 130, in tow of steamer Crescent City, stranded at Au Sable Point during dense fog; damage to vessel, \$5,000; released.

April 15, Tug Acme, towing the steamer Wilkesbarre through the ice fields, Buffalo Harbor, was cut down by the steamer and sunk; crew rescued; value of vessel, \$10,000.

Steamer Lagonda, collided with schooner Waud at the middle grounds, Port Huron, and the Waud was sunk and abandoned as a total loss; crew rescued; value of vessel, \$1,000.

April 26, steamer Choctaw, stranded on rock in Marquette Harbor during blinding snowstorm and high westerly gale; damage to vessel, \$6,000; released.

Schooner Mary Bourke, stranded at Chocalay Reef, during blinding snowstorm and high westerly gale; damage to vessel, \$15,000; cargo, \$3,000.

Steamer America, stranded on rocks near Rose (Waugoshance), and after jettisoning 9,000 bushels of grain was released; damage to vessel, \$15,000; cargo, \$15,000.

Schooner Grace Gribbie, stranded off Kingsville, Lake Erie, and became a total loss during high southwest gale; three of the crew were lost; value of vessel, \$3,000; cargo, \$800.

Schooner M. P. Barkalow, anchored off Rattlesnake Island to ride out the gale and foundered at anchor, becoming a total loss; three lives were lost—the master, his wife and son; estimated value of vessel, \$2,000; cargo of salt, \$500.

Schooner Pretoria, stranded just east of Ashtabula, after parting with steamer to enter harbor during high southwest gale; damage to vessel, \$3,000; heavy wrecking expenses; released.

A fish boat capsized on Thunder Bay during the gale and one life was lost.

Schooner Eliza White, stranded at Oak Point during heavy gale; released with nominal damages.

April 29, steamer Tampa, with barge Aurora in tow, stranded at Knife Island, Lake Superior, during heavy fog; damage to vessel, \$2,500; cargo, \$500; released.

Barge Aurora, in tow of steamer Tampa, stranded at Knife Island, during dense fog; damage to vessel, \$500; released.

April 30, steamer John Plankinton, stranded on Southeast Shoal, during moderately high wind; damage to vessel, \$500; released.

Steamer J. T. Hutcheson, stranded 20 miles west of Whitefish Point during heavy fog; the bottom was sandy; damages to vessel are nominal; released.

Schooner C. T. Van Straubenzie, without cargo, was caught in squall off Fairhaven, and lost all spars and canvas and was towed into the harbor; damage to vessel, \$1,000.

THE United States has for the past year, the British Engineer notes, again over-topped Great Britain in the production of Siemens steel. In 1900 it had a production of 3,398,000 tons, or 200,888 tons more than that of the United Kingdom. For the year 1901 the United States has raised its production of open-hearth steel to 4,656,000 tons. The largest proportion of this would seem to be in the shape of basic open-hearth steel, which last year gave three-fourths of the total. It appears from the 1900 census return that the total number of men employed in the iron and steel industry of the United States was 226,161, who received about \$12,000,000 in wages.

FORMER OPPOSITION TO STEEL SHIPS.*

At a meeting of the Railway Master Mechanics and Master Car Builders at Old Point Comfort, in 1899, Capt. (now Admiral) Robley D. Evans, made an address in which he said:

"In 1882 I had the good fortune to be ordered as a member of what is known as the first advisory board for rebuilding the navy. It was an awfully hot summer, and fifteen of us rather impatient spirits got together in Washington, presided over by Admiral John Rodgers. When we looked the field over, we found that we had no navy at all; we were hopelessly behind the age, and it seemed hardly worth while to rebuild our navy. I shall never forget as long as I live the trouble I caused in that small convention by proposing that we should build steel ships. I was the original steel man, and when I proposed that all ships in the future should be built of steel, Admiral Rodgers adjourned the board for three weeks to prevent a fight."

Now the animus referred to by Admiral Evans was induced by the fact that forgings which were being supplied at this time were of just such a type as might be expected to be produced by men who had not acquainted themselves with the requirements of the new material. While some were excellent in every way others were deficient in strength, or contained concealed cavities and were unreliable in general. The supply of material running so irregular in quality reflected unfavorably upon the steel industry at large and developed an undefined prejudice against steel generally, from which it has scarcely recovered in the minds of many users of forgings, even at the present day. It was fortunate for the country that the advisory board referred to contained as stalwart a champion of steel as Admiral Evans, for after they had visited the various ordnance works abroad, and had seen steel worked properly, they returned home and recommended to the Secretary of the Navy, Mr. Tracy, that by all means the new navy should be built of this metal, and as there were no properly equipped steel forges in this country one would have to be built to furnish the necessary armor, guns and engine forgings required in the construction of modern naval war vessels. Meanwhile this board had overcome, through the good offices of its secretary, the personal objections heretofore existing on the part of Sir Joseph Whitworth, to the use of his special steel casting and forging presses, elsewhere than in his own works, which were considered foremost in the manufacture of ordnance. Without entering into the details which accompanied the immediate establishment in this country, of the great ordnance works of the Bethlehem Steel Co., it is sufficient to say that in their equipment not only were the special appliances in use in this English works duplicated, but their size was doubled. A contract was also entered into at the same time by which the great works of Schneider & Co., of Le Crouset, France, which stood first among the makers of armor plate, were also duplicated at the Bethlehem plant. Thus, there arose in this country a forging plant at once larger and superior to any in the world. * * *

*From a paper read before the Engine Builders' Association at Pittsburg, May 22-23, 1902.

GERMANS WON'T SELL SHIPS.

At a general meeting held in Hamburg last week, the shareholders of the Hamburg-American line unanimously adopted a motion submitted by the directors, with the view of assuring that the control of the company shall not pass from the hands of Germans to those of a foreign corporation. It provides that the directors and board of supervision must be German subjects and live in Germany, and that in order to change this provision or transfer the seat of business of the company to a foreign country or dissolve the company, or do anything involving the loss or the restriction of independence of the company in favor of foreign undertakings, it will be necessary for a resolution to that effect to be adopted by shareholders representing four-fifths of the capital of the company, at a general meeting, and that a confirmation of the resolution, by the same majority, be adopted at a second general meeting.

STATEMENT OF THE VISIBLE SUPPLY OF GRAIN.

As compiled by George F. Stone, Secretary Chicago Board of Trade Saturday, May 31, 1902.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo.....	821,000	457,000	583,000	41,000	270,000
Chicago.....	4,444,000	2,248,000	732,000	385,000	.....
Detroit.....	129,000	8,000	.....	11,000	.....
Duluth.....	7,629,000	43,000	44,000	5,000	55,000
Fort William, Ont.	2,087,000	.....	.....	.....	.....
Milwaukee.....	124,000	4,000	119,000	9,000	86,000
Port Arthur, Ont.	140,000	.....	.....	.....	.....
Toledo.....	63,000	270,000	138,000	59,000	.....
Toronto.....	6,000	.....	14,000	.....	.....
On Canals.....	988,000	43,000	330,000	81,000	54,000
On Lakes.....	931,000	662,000	158,000	61,000	.....
Grand Total.....	28,604,000	4,227,000	3,055,000	752,000	589,000
Corresponding Date, 1901.....	35,932,000	16,413,000	11,218,000	743,000	822,000
Increase for week.....	.....	.....	740,000	.....	30,000
Decrease " ".....	2,025,000	70,000	.....	222,000	.....

While the stock of grain at lake ports only is here given, the total shows the figure for the entire country except the Pacific Slope.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Steamer Meeting Tug and Tow—Duty of Care.—The duty rests upon a steamer, having full control of its own movements, to keep out of the way of a tug with a tow, which occupies the position of an incumbered vessel. The Alabama, 114 Fed. Rep. (U. S.) 214.

Tug and Tow—Anchorage of Tow—Care Required of Tug.—The law imposes upon a tug the duty of exercising reasonable care and caution and maritime skill in everything relating to the safe anchorage of its tow, and it is liable to any one injured by its negligence in that respect. The Alabama, 114 Fed. Rep. (U. S.) 214.

Collision—Evidence—Maintenance of lights.—The positive testimony of credible witnesses, who were in a position to see, that the lights were set and burning on a vessel at the time of a collision, is entitled to greater weight than the negative testimony of other witnesses that they did not observe such lights. The Alabama, 114 Fed. Rep. (U. S.) 214.

Ships—Loading Applications—Condition—Duty of Owner.—It is the duty of a shipowner to keep in such condition that the loading appliances may be reasonably used without being liable to catch on obstructions, and endanger a gangway man handling a whip. The Anchoria, 113 Fed. Rep. (U. S.) 982.

Damage—Loss of Leg—Amount of Award.—A seaman twenty years old, strong and in good health, who lost his leg from an injury received in the service of the ship through the failure of the master to put into port where he could obtain surgical attendance, held entitled to damages in the sum of \$3,000. The Iroquois, 113 Fed. Rep. (U. S.) 964.

Removal of Vessel from Wharf—Liability for Injury.—A company at whose wharf a vessel is unloading cargo for it is liable for injury to her, through its superintendent, acting within the sphere of his authority, removing her, without knowledge of her owner, who was in command of her, to a place which her owner had told him was unsafe. Smith vs. Yellow Pine Co., 114 Fed. Rep. (U. S.) 99.

Inefficiency of Light.—Where it is shown that a vessel was equipped with lamps of an approved style, brought from a reputable dealer, the court will be slow to find that they were inefficient, or that those navigating the vessel failed to light and keep them burning on a dark and stormy night, when they were sailing in a locality where there was a probability of encountering other vessels. The Richmond, 114 Fed. Rep. (U. S.) 208.

Maritime Lien—Repairs.—Where libellant was asked by the captain of certain scows of which he was in charge to repair the same, and the repairs were necessary, and were made in a foreign port at the direction of such captain, who was without funds of the owner, the libellant is entitled to a lien therefor on the scows, which were the only means of credit for the bills incurred. The No. 6, 114 Fed. Rep. (U. S.) 115.

Negligent Loading of Vessel—Damages to Charterer.—Evidence considered, and held to sustain the claim of a charterer that a cargo of timber was improperly stowed by the master, by reason of which the full carrying capacity of the vessel was not utilized, and the charterer, who paid a lump sum as charter hire for the voyage, sustained loss for which he was entitled to damages. The John A. Briggs, 113 Fed. Rep. (U. S.) 948.

Maintenance of Lights—Evidence.—The failure of those in charge of one of two vessels to see or observe the lights of the other prior to collision does not disprove their existence; and cannot be accepted to outweigh the positive testimony of the officers and crew of the other vessel that the lights were properly set, and were seen to be burning up to within five minutes before the collision. The Richmond, 114 Fed. Rep. (U. S.) 208.

Ex Parte Experiments.—Testimony in regard to experiments to determine the position of a vessel's lights, and whether they could have been seen by the officers and crew as claimed, when the vessel was in a shattered condition from a collision, or after she had been rebuilt and materially changed, is not entitled to great weight, especially where the experiments were made by the adverse party without notice to the owners or crew, and when they were not present. The Richmond, 114 Fed. Rep. (U. S.) 208.

Steam and Sailing Vessels—Presumption of Fault.—Under the navigation rules requiring a steam vessel to keep out of the way of a sailing vessel when there is risk of collision, and requiring the latter to keep her course and speed, where it appears that she did so, a presumption arises that the fault for a collision was that of the steam vessel, and such presumption must be acted upon unless the accident is shown to have been inevitable, or that it was the result of neglect or omission on the part of those navigating the other vessel. The Richmond, 114 Fed. Rep. (U. S.) 208.



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THE COLLISION IN TOLEDO HARBOR

We but recently deplored the fact that wrecks, collisions, strandings, etc., were taking place daily throughout the season of navigation without even the pretense of an inquiry being made as to why these casualties so regularly occurred, or if blame should be attached anywhere for ignorance, carelessness or downright stupidity in bringing about such losses to life and property.

In the case regarding a collision in Toledo Harbor on May 7, between a tug and naphtha launch, whereby seven lives were lost, we have been surfeited with contradictory and voluminous decisions, while the third and most important one from a pilot's standpoint is yet to be heard from. Had this casualty happened outside of a port it is quite likely that little more would have been heard about it, but, as it was right under the nose, so to speak, of a municipality—and between insignificant tonnage, the probe has been applied in great form.

Immediately on the recovery of the several bodies a Coroner's Inquest was held, with the result, that the verdict exonerated all parties from being blameworthy in the matter and that the passengers in the naphtha launch came to their deaths by reason of being accidentally drowned through the result of a collision between the naphtha launch Frolic, in charge of Capt. Joseph W. Hepburn, and the tug Arthur Woods in charge of Capt. Charles W. Fitts. Said accident occurred in the Maumee river, near Ironville. Testimony shows that the pilots of either craft are not liable to criminal negligence.

So much for the verdict of the Coroner after having heard the evidence and carefully inspected the scene of the accident, also, taking into due and full consideration the manner in which the craft were handled, etc., etc.

The next step in this inquiry held with a view to showing cause for the loss of life and property and placing the blame thereof where it was due, came up before the Collector of Customs District Miami, at Toledo. This was a much more formal, serious and technical procedure than the "Coroner's Inquest" and resulted in the tug captain being found more than doubly to blame than the naphtha launch man was. The court opened in about the following manner:

"In the matter of the collision on the Maumee river within this port, May 7th, 1902, between the documented towing steamer, Arthur Woods, John P. Nagle, local manager, and Charles W. Fitts, pilot, and the undocu-

mented pleasure launch Frolic (naphtha), owned and operated by Joseph W. Hepburn, whereby seven lives were lost:

"I am called upon in an official capacity to sift the facts as they appear, and administer the law as it applies thereto, and any deviation on my part in this respect invites the severest penalties upon myself—Section 4497 R. S.

"Section 15 of the act of June 22, '74, makes it obligatory upon the collector to take cognizance of the violating of the navigation laws, and impose and collect, through the courts, if necessary, the penalties provided.

"It is the intention that the personal safety of passengers be not left to chance or to the negligence of careless servants. Without a strict enforcement of the laws of navigation, without a strict regard for compliance with the rules laid down for the safety of life and property at sea, on the lakes or navigable streams, owing to the frequent trips and generally crowded conditions of the marine highways, especially the rivers and harbors of our large ports of the United States, the safety of millions of people might be endangered.

"I am to consider the disaster as presented upon the question of violation of the steamboat laws, and if shown, am required to impose and demand the penalties as provided in Title LII of the Revised Statutes of the United States."

After hearing all possible testimony and quoting at great length the Sailing and Steering rules known as the "White law," the Collector of Customs rendered the following decision:

"I have undertaken to make clear the position the Collector of Customs is required to take under the law, and in view of the facts set forth I am impelled to find that the steam tug Arthur Woods violated Section 1 of the act approved July 9, 1886, and, under Sections 4499 and 4500 of the Revised Statutes, has incurred a penalty of \$500.

"Furthermore, I find that the pleasure yacht Frolic, while being operated upon the night of May 7 (at the time of the collision with the steam tug Arthur Woods) was being navigated without the signal lights imperatively called for by Rule 2 of the act approved February 8, 1895, providing rules and regulations for the government of navigators upon the waters of the Great Lakes and the St. Lawrence river as far east as Montreal. I am impelled, therefore, under Section 2 of Rule 28, of the act last referred to, to impose a fine of \$200 upon the launch Frolic."

We are pleased to commend the very able manner in which the Collector of Customs quoted and drew his deductions from the active clauses of the "Steering Rules," and to say that if Col. Joseph C. Bonner had undergone one or more admiralty examinations, besides spending a number of years in service afloat, he could not have arrived at a more just decision, whether equitable or not, is another question, as there is quite a discrepancy between \$200 and \$500. Be this as it may, there is nothing to capsize in the findings of the Customs Collector though possibly the fines may be equalized, made nominal or remitted altogether, this, however, at the discretion of the Secretary of the Treasury, and entirely outside the bounds of the duties of the Collector of Customs.

The third inquiry to which we alluded in the foregoing must now be held before Messrs. Judson and Pleitz, respectively, the local inspector of steamboat hulls and of boilers, both men taken from the ranks of the sailing community and liable to be equally as expert in the practical handling of vessels and the proper rendition of the laws governing the sailing and steering of same, as the Toledo Collector of Customs.

On this portion of the final winding up of the triangular inquiry we are constrained to hold our peace until judgment shall have been rendered. At the same time, we are rather curious to learn who assisted the Collector of Customs in arriving at his unquestionably practical findings in the case.

OCEAN CURRENTS.

It is modern, democratic, and above all, popular, to endeavor to capsize any or many of the accepted principles governing the economy ruling, at least, this earth and the existence of its occupants. Day by day new 'ologies and 'isms seem to be evolved, and these innovations are so logically treated by their authors, discoverers or originators, that it is at times somewhat difficult for the ordinary layman to follow out the speculations of the professional, or specialist, and along his, or their, obviously unique thoughts.

A writer in June Scribner's attempts to explode the universally accepted theories regarding ocean currents and their climatic influences, etc. From a cursory glance over the article one would think that the writer reviled the late Lieutenant Maury, U. S. N., and poked fun at the

San Francisco Chambers of Commerce, the one authority for his writings regarding the Gulf Stream, and members of the other for simply noticing the probable effect of the Japan Current on the climate of the Pacific Slope. A more careful perusal of the article, however, shows a desire to transpose cause and effect, and so as to place the relation of ocean currents secondary to the questionable primary cause of weather changes which is said to be due to the shifting of aerial currents as indicated by the barometric pressures, an economy or principle which we know to be not new, yet not accepted as being wholly and inclusively true.

We possibly grasp at something more tangible when the author asserts that the Gulf Stream ceases to exist, that is, to differ in set and temperature from the rest of the North Atlantic, east of the longitude of Cape Race, Newfoundland. To entertain such a theory in serious earnestness, is to accept a doctrine revolutionizing the laws governing the ocean in its bed, and, in a measure, to set us adrift without even as much as the proverbial straw to cling to, for, if the chain be parted, how must the intervening space be linked up to preserve the continuity of the well-tested and universally accepted knowledge of the seas over which the progression of currents so markedly obtains. It is so much easier to pull down than to build up, nor can logical replies be at all times given to senseless inquiries or apparently ridiculous interrogatories, at the same time, it evinces the spirit of unprogressiveness to rest content with original customs, practices or the ancient suasions of past generations, to this extent, therefore, do we commend the well studied, though apparently radical, enunciations contained in the article in Scribner's.

As taking the question of ocean currents, their set and drift, cause and effect, in a lighter vein or strain, let us go back a century and learn from the faith in the belief of the ancient down-easter, when he sold his spars for a large sum to a dismayed vessel, allowing that he could drift across the North Atlantic in course of time by keeping in the heft of the Gulf Stream until he reached the fence which bifurcated the current in its eastern set, when he could be picked up before going north about in the Renell's branch, or walking away south with the Portuguese or Guinea current to the equatorial movement.

This Guinea current brings to memory a similar experience of a British shipmaster, Capt. Alfred Fry, as duly related and authenticated. This navigator, it is said, and he told it in public upon himself, sailed from a port on the coast washed by this current, the breeze died away, yet the land began to disappear below the horizon. Day after day the vessel drifted in the current. Badagry was seen in the distance; the next land sighted was Prince's Island, and then Cape Lopez. Thence she steered along the equator with the south-west monsoon, and eventually reached the place of departure. Her master, ignorant of the current, had set out for a port nine miles distant, went 3,000 miles, was away seven weeks, and yet was no nearer his desired haven.

Cause and effect need not be confounded through the persistency of one writer on ocean currents. The rotation of the earth on its axis, the variation of atmospheric pressure, evaporation, differences of temperature and salinity, precipitation, solar energy, the trend of the land, contrary currents of opposing temperatures, prevailing direction of winds, etc., etc., all lend their effect to the permanent, though at times, variable currents. Near the Banks of Newfoundland the Gulf Stream proper experiences irregularities in velocity and direction in consequence of the wider scope permitted the flow, the varying winds and barometric pressure, but its warmer water is undoubtedly borne to the shores of the British Isles, also from the point of bifurcation to Norway and Iceland, or, if we transferred Greenland to that latitude and longitude, we would be prone to think so, and this too, irrespective of aerial currents.

Hence, we can hardly take aboard the weight of the mandate set forth by Mr. Watts when he says: "That the Gulf Stream might be engulfed at Colon or dammed at Key West, without anyone from the Scilly's or Hebrides being any the wiser." Mr. Watts apparently travels on his own rendition of the gullibility of the practical navigator when stating that it is only necessary to be earnest in conviction and picturesque in diction, to secure the safe conduct of your opinions for several generations.

It should be understood, however, that the writer in

Scribner's does not deny the existence of the chief ocean currents, except as he tackles the Gulf and the Japan Streams, relatively in the North Atlantic and North Pacific Oceans. His arguments seem narrow, unpractical and anything but convincing, and as if he desired to puzzle others in the maze of his own quasi scientific wanderings on the palpably practical subject of general oceanic circulation. Discussion on this subject should be of the widest possible character, and, since the very cause as well as the existence of the Kuro Siwo and the Gulf Stream have been denied, let the Oga Siwo of the Pacific, the Agulhas of the Indian Ocean, the Labrador and Guinea currents of the Atlantic be also touched upon in further explanation of the parts of the one great system.

Space forbids us attempting to say anything more on this interesting subject at the present, but we hope to hear of, or read an expression of opinion from the United States Hydrographic Office, and to further debate on the continuity of the laws governing ocean currents in future issues of the RECORD.

PRESIDENT J. J. HILL, of the Great Northern Railroad, has been talking to a Seattle, Wash., editor, and in the interview brought out a point or several of them, which are not generally known. As directing attention to the importance of a lake port, and a western port at that, Mr. Hill made the surprising statement that not London, as many persons suppose, nor New York or Liverpool, but the once ridiculed town of Duluth, last year handled the largest volume of floating commerce of any port in the world. The exact figures of the tonnage handled at the five largest shipping centers as given by Mr. Hill, are: Duluth, 17,000,000 tons; London, 16,000,000 tons; New York, 15,000,000 tons; Chicago, 14,000,000 tons, and Liverpool, popularly supposed to be the largest shipping port, 12,000,000 tons.

OUR tonnage enrolled and licensed for the coasting trade and fisheries reached, on June 30, 1900, the total of 4,338,145 gross tons, an amount greater than the total tonnage of Germany and Norway or Germany and France. Tonnage registered for the foreign trade (excluding 42 whalers of 9,899 gross tons) 816,795 tons. On June 30, 1900, the merchant marine of the United States, enumerating all kinds of documented shipping including the tonnage of the Hawaiian Islands, Northern Lakes and Western Rivers comprised 23,333 vessels of 5,164,238 gross tons. This is the aggregate, and is inclusive of vessels registered, enrolled and licensed, canal boats, barges, yachts, etc., from 5 tons gross upwards.

It is understood that the American shipping syndicate has offered the Cunard Co. \$52,500,000 for their fleet, including two big new steamers recently ordered, says a Herald dispatch from London. The Cunard directors are in communication with the British government with a view of obtaining such increased subsidies for mails and cruisers as will enable them in the interests of the shareholders to resist the tempting offer of the United States syndicate.

It is gratifying to the lake marine engineers that with all of the strandings, collisions, etc., their watchfulness, skill or ability is never brought into question before the local inspectors of steamboats, coroners or collectors of customs. The fellow in the pilot house stands the brunt of these inquiries and is likely to be compelled to do so.

A New York nautical publication is planning a movement against the habit some people have of addressing a master of a vessel as "Cap." One way of checking the ill mannered custom, the New York publication says, is to have the captains call attention to the nickname every time they hear it, and ask that its use be discontinued in addressing them. The marine journal goes on to say that a well known yacht captain said the other day as he corrected a friend as he used the offensive diminutive: "I hope you won't be offended, but we yacht masters consider the term 'Cap' an insult. Call us by our Christian names or family names, but please not the nickname. It is unworthy of the profession and belittles the men in it. You can call a drug clerk 'Doc.' without offending the proprietors, but not a physician. If the newspapers will assist in breaking up the habit they will earn the gratitude of the men in the profession."

AFRICAN COMMERCE.

The declaration of peace in South Africa, which is to be followed by the reopening of the greatest gold-producing mines of the world and presumably by a general revival of business in that greatest consuming section of Africa, lends especial interest to a monograph entitled "Commercial Africa in 1901," just issued by the Treasury Bureau of Statistics.

The commerce of Africa, according to this publication of the Bureau of Statistics, amounts to over \$700,000,000, of which 429 millions represented the value of the imports. Necessarily in so large an area with so many tribes and people who keep no records of their transactions, a considerable amount of commerce must pass without being recorded in any way. The total imports at the ports where records are kept amounted in the latest available year to \$429,461,000, and the exports to \$263,907,000.

A very large proportion of the trade of Africa is with England. There are numerous reasons for this, the most important, however, being that her colonies—Cape Colony and Natal—on the south, are the avenues through which pass most of the goods for that section, and that a very large share of the growing trade is also carried by British vessels, while the bulk of the mining, as well as the stock raising and general development of that section, is in the hands of the British colonists or capitalists. In the north, a large share of the trade of Egypt is given to Great Britain, whose influence in the management of Egyptian affairs is well recognized, while in Algeria, which has a large trade, a very large proportion is with France, the governing country.

The total recorded imports into Africa were distributed as follows: Into British territory, \$157,575,000; French territory, \$92,004,000; Turkish territory, \$77,787,000; Portuguese territory, \$20,795,000; German territory, \$8,336,000, and into the Congo Free State, \$4,722,000.

Of this importation of \$429,461,000, about 5 per cent was furnished by the United States, the total for 1901 being \$25,542,618. Our total exports to Africa have grown from \$6,377,842 in 1895, to \$18,594,424 in 1899, and \$25,542,618 in 1901. This rapid increase is largely due to the fact that orders sent to the United States for mining machinery and other supplies so much in demand in South Africa are promptly filled with goods of the latest pattern and most acceptable character.

That the gold and diamond mines of South Africa have been and still are wonderfully profitable is beyond question. The Kimberley diamond mines, about 600 miles from Cape Town, now supply 98 per cent. of the diamonds of commerce, although their existence was unknown prior to 1867, and the mines have thus been in operation about 30 years. It is estimated that \$350,000,000 worth of rough diamonds, worth double that sum after cutting, have been produced from the Kimberley mines since their opening in 1868-9, and this enormous production would have been greatly increased but for the fact that the owners of the various mines there, formed an agreement to limit the output so as not to materially exceed the world's annual consumption.

Equally wonderful and promising are the great "Witwatersrand" gold fields of South Africa, better known as the "Johannesburg" mines. Gold was discovered there in 1883, and in 1884 the value of the gold product was about \$50,000. It increased with startling rapidity, the product of 1888 being about \$5,000,000; that of 1890, \$10,000,000; 1892, over \$20,000,000; 1895, over \$40,000,000; and 1897 and 1898, about \$55,000,000. Work in these mines has been practically suspended during the war in progress in that section within the past two years. The gold production of the "Rand" since 1884 has been over \$300,000,000, and careful surveys of the field by experts show beyond question that the "gold in sight" probably amounts to \$3,500,000,000, while the large number of mines in adjacent territory, particularly those of Rhodesia, whose output was valued at over \$4,500,000 last year, gives promise of additional supplies, so that it seems probable that South Africa will for many years continue to be, as it is now, the largest gold producing section of the world.

A NEW ENGINEERING COMPANY.

A company composed for the most part of gentlemen prominently identified with the foundry trade, has been organized recently through the efforts of John R. Russel, the well known Detroit manufacturer. The new corporation is to be known as the Great Lakes Engineering Works, and on May 31, it took over the plant and business of S. F. Hodge & Co., known for years as the Riverside Iron Works, one of the oldest of Detroit's manufacturing establishments. Mr. Russel, who is treasurer of the Russel Wheel & Foundry Co., having as his chief associates in the undertaking H. W. Hoyt, vice-president of the Allis-Chalmers Co.; Antonio C. Pessano, vice-president and general manager of the Geo. V. Cresson Co., of Philadelphia; Geo. H. Russel and John A. Penton. Fifteen years ago Mr. Penton was employed in the Hodge works as a molder. The new company organized by electing the following officers: President and general manager, Antonio C. Pessano; vice-president, H. W. Hoyt; secretary and treasurer, John R. Russel; directors, the foregoing with George H. Russel and John A. Penton. The capital stock remains the same as that of the Hodge company, \$200,000. The business will be substantially that of the old company, the manufacture of

marine and stationary engines mining machinery, propeller wheels, and general jobbing foundry work. Orders which the new company has secured insure active operations for several months. The Hodge works were started in 1863, the original firm being Cowie, Hodge & Christie. In 1865 the firm became Hodge & Christie, and a few years later Samuel F. Hodge became sole proprietor. The present corporation dates back to 1883. Aside from the excellent facilities for shipping by rail, the company, as its principal products, such as marine engines, shafts, propellers, etc., require, has a wharf 250 feet long, equipped with cranes and derricks for handling heavy vessel-propelling machinery. The main building is a brick structure four stories high and 100 feet square. The foundry building is 84x160 feet, and the machine shop 945x150 feet. The Hodge works have furnished engines for some of the best known boats on the lakes. In its stationary engine output are included a number of pump-

DULUTH-SUPERIOR.

H. A. Blume has purchased the small steamboat Fanchon. The former owners were La Framboise and Dion.

One of the three tugs which the tug company had at work here is again laid up. Capt. Joe Jacobs quit the Abbott. Engineer Art Thompson, who was on the Abbott has also joined the strikers.

The launching of the steel cargo steamer Sonora, which was expected to have taken place last Saturday, was postponed until a later date. The exact time depends upon when the boilers are completed. In the meantime work is being carried on in the completion of the hull.

The steamer Mataafa, Capt. D. P. Wright, bound for Duluth, light, grounded on Monday, on Knife Island, the cause of her accident being a dense fog. The steamer was released by the tug Edna G. from Two Harbors, and the steamer Nielson. The extent of damage to the Mataafa is not known. She arrived here all well.

Capt. James Taylor, master of the trust tug Carrington, returned to his boat Wednesday after being absent since Monday night. He said that he had walked in from a resort fifteen miles out in the country, where he claimed he had been held by the striking tugmen. According to his story, the strikers kidnapped him Monday night, put him in a hack and took him out of the city. The next morning they told him that Duluth was twenty-three miles away.

For the past two weeks wheat receipts have not averaged more than five or six cars a day. One of the odd features of the situation is that elevator and grain commission men are at sea as to whether there is little wheat left in the tributary country, or the farmers are holding the grain. Reports from one territory would lead one to believe that the farmers were holding the stuff, and from another they go to show that there is little wheat to hold. A Duluth elevator man says: "I do not believe that the wheat in the tributary country has all been marketed. I am satisfied that the farmers are holding more of it back than we know of. Reports are very conflicting, however, and I sometimes think that one man's guess is as good as another." Assistant General Freight Agent Baird, of the Northern Pacific, when in Duluth a few days ago, said that he did not think much wheat remains in the hands of the farmers. At any rate, the receipts at the head of the lakes are below normal for this time of the year, and the market is quiet.

In the circuit court at Marquette, Mich., on Saturday, Judge Stone instructed the jury to bring in a verdict for the defendant in the ejectment case of the St. Mary's Water Power Co., (the Clergue interests) vs. the Chandler-Dunbar Power Co., on the ground that there was no cause for action. The suit was over the title to Private Land Claim No. 95, located at the head of the St. Mary's rapids, and valued at some \$50,000. According to the evidence, the defendant corporation originally held title to a half interest in the property, and through a tax title, purchased under the law of 1885, it gained a claim to the other half which it clinched by holding possession for a term of even more than the five years the particular statute provides for. Proof was furnished that the Chandler-Dunbar people had maintained possession, and had made various improvements for seven years, and although the plaintiff seemed to have a good title otherwise, the case went against it in accord with the terms of the tax law on which the defense was based.

MANNING THE NAVY.

There is an abundance of good material with which to man the Navy, Admiral Coghlan in his speech at the Young Men's Christian Association banquet last night told about seeing a naval recruiting station out in the Rocky Mountains, and said many of the best sailors in the Navy come from the West, some of them from the alkali desert, where one has to go for miles to find water. But such men have to be trained before they can become efficient seamen. A training school on the Great Lakes would have a number of advantages. Among other things, it would be conveniently near the locality which is apparently the principal recruiting ground for the men behind the guns.—Troy Times Budget.



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TREASURY DECISIONS.

Discharge of Seamen—Seamen Shipped in the Coasting Trade, Before a United States Shipping Commissioner Should be Discharged and Receive Their Wages Before Such an Officer:

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
WASHINGTON, D. C., May 21, 1902.

SIR: The attention of this office has been invited to the fact that in certain cases shipping commissioners do not observe literally the requirement of the act of February 18, 1895, that seamen signing articles before United States Shipping Commissioners for coasting voyages shall be discharged and receive their wages before a commissioner or officer acting as such.

Shipping commissioners should take such measures as may be practicable to secure a full observance of the regulations upon the subject.

Respectfully,
E. T. CHAMBERLAIN, Commissioner.

United States Shipping Commissioner, Baltimore, Md.

Inspection Fees.—Inspection Fee on Canadian Passenger Steam Vessels Under 100 Tons, 8 Cents Per Gross Ton and \$5 Additional:

TREASURY DEPARTMENT, May, 22, 1902.

SIR: Referring to your letter of the 19th instant, in which you say that under the Canadian inspection laws (61 Vic., ch. 46), paragraph 37, mentions fees to be collected from vessels of 100 tons or under to be \$5, and you ask if a fee of \$8 shall be collected from such vessels "without regard to tonnage of vessels inspected," you are informed that the Department's construction of paragraph 37 of the act referred to is, that whereas steam vessels of over 100 tons must pay a fee of 8 cents per gross ton and \$8 additional, steamers under 100 tons must also pay 8 cents a ton, but only \$5 additional, the tonnage charge to be computed in both cases. You will be governed in such cases accordingly.

Respectfully,
O. L. SPAULDING, Acting Secretary.
Collector of Customs, Cape Vincent, N. Y.

Amending Rules and Regulations.—Anchorage and Movement of Vessels in Harbor of Chicago:

TREASURY DEPARTMENT, May 27, 1902.

To Towing Companies, Owners of Tugs, Masters of Vessels and Others Concerned:

The following amendments to the rules and regulations relating to the anchorage and movement of vessels in the harbor of Chicago, dated July 9, 1896, are published for the information and guidance of all concerned:

Rules 2 and 3 on page 4 of said regulations are expunged and the following inserted:

Rule 2.—Anchorage grounds in the interior breakwater or basin.—Vessels shall anchor west of a line drawn south from the east side of the light-house slip, and south of a line drawn east from the United States dock line of the east limit of the proposed park, at a distance of 300 feet south of the Randolph street pier, and north of a line drawn east from Van Buren street, and south of a line drawn west from the north end of the southerly breakwater (east entrance of Van Buren street gap), and not within 100 feet of the southerly breakwater.

Rule 3.—Yachts and small excursion vessels may place buoys and lie at anchor within a line drawn south from the end of the government pier projecting eastward adjacent to the life-saving station at the north entrance of the Chicago interior breakwater or basin, and south of a line drawn east of the United States dock line east limit of proposed park, at a distance of 300 feet south of Randolph street pier, and north of a line drawn east from Van Buren street, and not within 50 feet of the east limit of proposed park.

Rule 4.—No anchoring or placing of buoys will be permitted in said breakwater or basin outside of the limits defined in rule 3.

Rule 5.—Steamers and steamers with tows are prohibited from using as a channel-way the grounds set apart

in rule 3 for the anchorage of yachts and small excursion vessels.

LESLIE M. SHAW, Secretary.

Fees for Inspection of Foreign Passenger Steamers.—Foreign Passenger Steamers Requiring Inspection by United States Inspectors Should pay the Same Fees Exact From United States Vessels in the Country From Which said Foreign Steamers Hail. (Act of February 15, 1902; Dept. Cir., April 1, 1902).

TREASURY DEPARTMENT, May 21, 1902.

SIR: The Department is in receipt of your letter of the 17th instant, inclosing a protest of the Niagara Navigation Co., Limited, against the payment of \$305.76 inspection fees on the four steamers, Chippewa, Corona, Chicora and Ongiara, claiming that no inspection fees are collected from steamers of the United States in the Province of Ontario, and that their steamers are exempt under Department Circular No. 35, of April 1, 1902.

In reply, you are informed that the Department was aware, at the date of issuance of Department Circular No. 35, and so stated, that the Dominion of Canada charged inspection fees for each merchant steamer of the United States inspected in Canada "except in the Province of Ontario," but, notwithstanding that assumed fact, collectors of customs were directed in the same circular to "until further notice, collect from all steamers owned in either of the Provinces of the Dominion of Canada requiring inspection by the United States inspectors of steamboats, the same fees as charged by the inspectors of the Dominion government for the inspection of merchant steamers of the United States," under the laws of the Dominion (Vict. 61, ch. 46).

Under the act of Congress approved February 15, 1902, quoted in full in Circular No. 35, referred to by the agent of the Niagara Navigation Co., it is provided:

"That the Secretary of the Treasury shall have power to waive at any time the collection of such fees upon due notice of the proper authorities of any country concerned that the collection of fees for the inspection of American steam merchant vessels has been discontinued."

The construction of this clause by the Department is, that the notice referred to applies generally to the "country concerned" and not to separate specified parts thereof, but, as in the case of Canada, to all its provinces covered by the inspection laws of the Dominion government.

You are further informed that the honorable the Secretary of State had, previous to the date of Department Circular No. 35, at the request of the Department, communicated to the British ambassador at this capital the information that under the terms of the act of February 15, 1902, referred to in said circular, it would, "become the duty of this Department to exact complete inspection of all Canadian steamers, their hulls, boilers, and equipments as required by the United States inspection laws, and also collect from each steam vessel inspected the equivalent fees now collected by the Dominion government for the inspection of American steam vessels, until such time as the Department is officially informed that the Dominion has enacted a similar reciprocal law in regard to inspection, as that referred to herein." (Act February 15, 1902).

Respectfully,

O. L. SPAULDING, Acting Secretary.
Collector of Customs, Niagara Falls, N. Y.

Negligent Navigation by Tug.—A tug which was navigating a narrow and much frequented channel on a dark night with four barges in tow, and which elected to take the left-hand side of the channel, which placed it in the track of outgoing steamers, was bound to the exercise of extraordinary care to guard against collision between such steamers and the vessels of its tow, and it failed to exercise such care in sheering one of the barges under its own momentum across the space intervening between it and the shore, which was considerable, where it would be directly in the pathway of any steamer passing on that side, and without power to control its movements, and must be held in fault for a collision between such barge and a meeting steamer. The Alabama, 114 Fed. Rep. (U. S.) 214.

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MARINE PHOSPHORESCENCE.

The Lancet has had a most interesting article lately on the cause of the phosphorescence which one sometimes observes in the water out at sea. No one who has leaned over the side of a vessel and watched the little gleaming particles as they pass by ever forgets his experience. The effect on one's mind is indelible, and the thought that usually occurs to one is connected with the beauty of God's world. It now appears, however, that this beauty is but a phase of disease. A "pathogenic and luminiferous bacterium" invades the marine animals concerned and does them to death. While they are dying and for some hours afterward they give off the brilliant light which has entertained many a crowd of passengers on a summer evening. One has here a kind of swan song in color. One does not need, however, to go to sea in order to find color in disease and death. One can find it in the North Branch of the Chicago river. The foul gases which rise from the bottom of the river, break in bubbles on the surface and coat the water with the most dazzling greens, reds and purples that nature can produce. This beautiful phenomenon reconciles many people to a short halt on the bridges. The impurity round about contrasting with the clearness of the floating colors makes a picture worth painting. As for the diminutive sea creatures whose death results in the phosphorescence men have admired, one cannot help feeling what may be a fantastic pity for their fate. They are so beautiful that one might wish they were a part of eternal nature and lived forever.

EASTERN FREIGHTS.

Messrs. Funch, Edye & Co., New York, report the following condition of the freight market:

With the exception of fixtures effected for timber from the Gulf, and deals from the British Provinces, there is little of any business moving. Whilst there was some little demand for early tonnage from the Bay of Fundy ports, this now seems to have subsided, and charterers are now not inclined to pay over 35s. against 37s. 6d a week or ten days ago. The timber charterers from the Gulf have been securing tonnage at rates slightly in their favor, and as vessels continue to offer freely, they do not show any disposition to advance their present ideas. As long as the demand in all other directions continues neglected, it is unlikely that there will be any improvement in freights from the Atlantic and Gulf ports.

The only feature of interest in the market for sail tonnage has been a slight revival of case petroleum shipments to the Far East at a modification in rates from those paid some time since. Otherwise we have nothing new to mention.

Grain to Liverpool or London, 3 cents; Glasgow, 2½ cents; Bristol, 4 cents; Hull or Leith, 4½ cents; Newcastle, 5 cents.

LATEST MARINE PATENTS.

700,769.—Diving vessel. Thomas H. Hazard, Vancouver, Canada.

700,799.—Apparatus for unloading ships' cargoes. Arthur Mullan, San Francisco, Cal.

700,827.—Swivel-rowlock. Alden H. Rollins, Cambridge, Mass.

701,009.—Life-boat launching device. James W. Bedford, San Francisco, Cal.

701,049.—Ship's davit or boat-lowering device. Peter C. Johnson, Seaford, near Liverpool, England.

701,053.—Barge-loading device. William D. Killebrew, Cape Girardeau, Mo.

701,060.—Marine-engine governor. John Levey and Thomas M. Sadler, Lindsay, Canada.

701,128.—Life-boat. August Baumgart, Cornlea, Neb.

701,156.—Apparatus for closing or opening water-tight bulkhead-doors. William Crawford and Alexander R. Crawford, Glasgow, Scotland.

701,242.—Screw-propeller. Jacob Aegarter, San Francisco, Cal.

SUN'S AMPLITUDES.

The following approximate amplitudes of the sun's rising or setting will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset, by reversing the east bearing given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the sun's setting. The bearing may be taken when the sun's center is on the horizon, rising or setting. The elements which may be obtained by taking these amplitudes are the quantities known as local attraction, variation and deviation, or the total difference between compass and true, or geographical bearings.

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.
 Date. Amplitude. Bearing P'ts. Bearing Comp.
 June 6.....E. 31° N. = N. 5¼ E. = N. E. by E ¼ E.
 June 12.....E. 32° N. = N. 5½ E. = N. E. by E ½ E.

LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.
 Date. Amplitude. Bearing P'ts. Bearing Comp.
 June 6.....E. 32° N. = N. 5½ E. = N. E. by E ½ E.
 June 12.....E. 33° N. = N. 5 E. = N. E. by E.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.
 Date. Amplitude. Bearing P'ts. Bearing Comp.
 June 6.....E. 34° N. = N. 5 E. = N. E. by E.
 June 12.....E. 34° N. = N. 5 E. = N. E. by E.

LAKE SUPERIOR, LAT. 48° N.
 Date. Amplitude. Bearing P'ts. Bearing Comp.
 June 6.....E. 35° N. = N. 4¾ E. = N. E. ¾ E.
 June 12.....E. 36° N. = N. 4¾ E. = N. E. ¾ E.

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly, if to the left, the deviation is westerly.

ESCANABA ORE DOCKS.

The Chicago & Northwestern railroad has started the construction of another ore dock at Escanaba that, it is officially declared, will be the largest and best equipped on the entire chain of lakes. The structure will be erected immediately south of No. 5 dock, and for several days past an average of 40 carloads of timber have been received, including fir from Oregon. A force of 150 men has been sent from outside points to assist in the construction work. The road already possesses four docks at Escanaba, with a total of 892 pockets and a storage capacity of 130,290 tons, but the ore traffic has reached such proportions that they have been found inadequate for present and probable future demands.

JAMES SPENCE ROBERTSON.

If JAMES SPENCE ROBERTSON belonging to Dundee, Scotland, who was, it is believed, about 1889 in Tawas City, Michigan, U. S., and who was, it is understood, latterly acting as a Steward on a Lake Steamer running out of Bay City, Michigan, U. S., will communicate with the Subscribers, he will learn something to his advantage.

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 34 Reform St., Solicitors.
 Dundee, Scotland.

AN ENGINEERING FEAT—BRIDGE WORK.

One of the greatest feats in the history of the Pennsylvania railroad took place last week, shortly after noon Sunday, when the big six-span trestle bridge at New Brunswick was moved 14½ feet in 1 minute and 48 seconds. This feat has never before been accomplished in the history of railroading.

To eight stationary engines designated by numbers was assigned the task of moving the steel structure. Four of these were on floats in the Raritan river, and the other four on adjacent banks. The task was the more difficult since the large drawbridge over the Delaware and Raritan canal had to be moved as an independent structure. The bridge has six spans of 155 feet each, so that the total length, exclusive of the draw, was 930 feet. With the draw the steel work moved was 1,000 feet long, and the weight about 2,700 tons.

G. W. Mershon and W. R. M. Mershon, his assistant, who had charge of the moving, were stationed on a central float in the river. On a small platform at the top of the trestle a guard was stationed with a white flag in his hand.

As the last passenger train due moved off the trestle the connecting rails at either end were torn up by gangs of laborers, the wedge blocks were removed from the long iron rollers on which the bridge supports had been placed, and Mr. Mershon gave the signal to make ready by a long blast of the engine whistle.

One minute later the signal to start was given, the ropes tightened and the big structure glided slowly to its new resting place. The actual movement on the eastern end of the bridge took but one minute and 48 seconds. On the western end there was a slight delay, but within three minutes the tracks were level on their new bed, and the work of spiking the connecting rails into place was begun.

There was not the breakage of a rope or the straining of a bolt, so perfect had been the preparation.

The work of preparing the structure for moving was enormous. Both the bridge and the draw had to be placed on rollers, running in grooved tracks, placed on the stone work under the iron trestle and out to the southern extremity of the piers. Heavy timbers were bolted together at the exact spot where the bridge was to be stopped, and tackle of all descriptions was affixed to the important sections of the bridge.

Thirty-six minutes after the last train had passed over the bridge in its old position a freight train of 67 cars passed over the trestle on its new bed.

A DREDGE FOR THE CUYAHOGA DISTRICT.

The impression prevailed last week that the entire appropriation in the rivers and harbors bill for dredging plants on the chain of lakes had been wiped out. This was put down as an achievement by the dredge owners on the lakes. It has been since learned that this interpretation is somewhat in error. The bill which passed the House provided for a dredging plant for Duluth and one for Cleveland. The Senate cut out the Duluth dredge, but did not interfere with the Cuyahoga district dredge. In that shape the bill went to the joint committee of the House and Senate for revision of the disputed parts. The disputed parts alone were under consideration. The joint committee had no right to go into the bill itself as passed by both branches, nor was any action taken, hence the Cleveland dredging plant is assured. The only action which the joint committee took was in regard to the Duluth dredge, and the committee decided to concur in the action of the Senate regarding the proposed head of the lakes plant. The cutting out of the appropriation for dredges at the head of the lakes gave rise to the report that the government would not supply any dredges.

LORD KELVIN says that power can be electrically transmitted 300 miles, using a pressure of 80,000 volts. While staying in Rochester, he formulated a scheme for using all the power of the Genesee river by constructing dams at various points with turbines and 2,000-volt generators connected in series on a single wire not more than ½ inch.

NOTES.

It has been virtually agreed by the United States and Denmark that the treaty providing for the sale of the Danish West Indies to this Government shall be extended for one year. This action is made necessary by the fact that the Danish Parliament has adjourned without ratifying the sale. The treaty expires by limitation on July 24, and as Parliament does not meet again until September, an extension of the treaty is the only way to avoid the necessity for going over all the negotiations a second time.

Good American practice allows one square foot of surface in condensers for every 10 pounds of steam to be condensed per hour with a vacuum of 25 inches of mercury and an initial temperature of 75 degrees Fahr. for the cooling water. About 25 pounds of water per pound of steam is allowed, and the condensed steam is reduced to a temperature of about 120 degrees Fahr. This amounts to heating 25 pounds of circulating water from 75 degrees to 115 degrees Fahr. per one-tenth square foot of surface per hour with steam at 133 degrees Fahr.—The Engineer.

DIRECTOR of the Weather Bureau, McAdie, at San Francisco, reports that during the storm which prevailed on the Coast May 16-19, the record of velocity at Point Reyes, Cal., shows that in the seventy-two hours the wind blew 4,542 miles—1,085 in the first twenty-four hours; 1,580 in the second and 1876 in the third. For over forty-eight hours ending at midnight, May 18, the rate was seventy-two miles an hour; for the six hours immediately preceding midnight on that day the rate was eighty-eight miles. The windiest hour was from 5 to 6 on the afternoon of the 18th, when the wind blew 102 miles. The highest velocity for any five minutes was at the rate of 110 miles an hour, and the highest velocity for any one minute was 120 miles an hour. Some idea of the extreme velocity can be gained when it is stated that during the Galveston disaster the rate was only eighty-four miles an hour.

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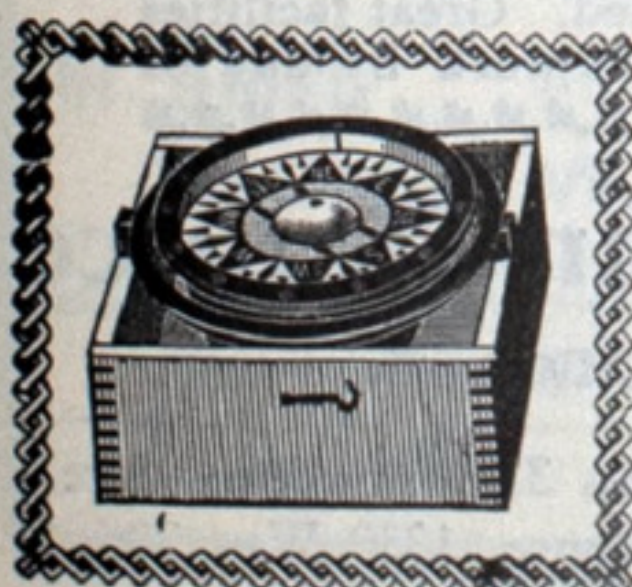


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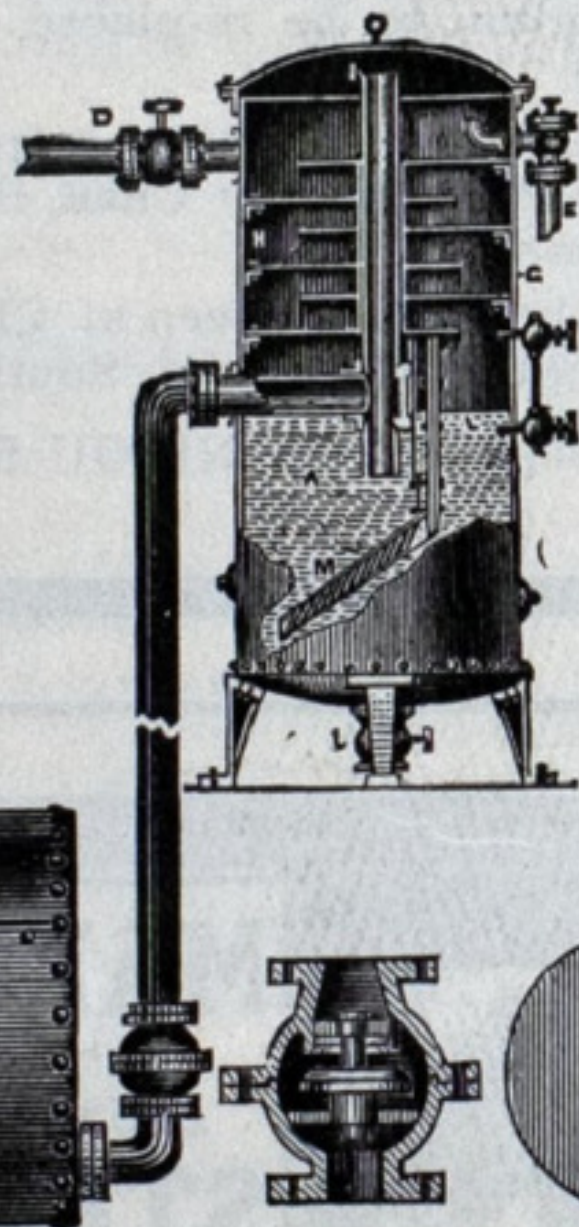
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Mitchell Transportation Co.'s steamer
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Minnesota Iron Co.'s steamer Presque Isle.
American Steel Barge Co.'s steamer Alex.
McDougall.

Lake Michigan & Lake Superior Trans-
portation Co.'s steamer Manitou.

Bessemer Steamship Co.'s steamers S. F.
B. Morse and Douglas Houghton.

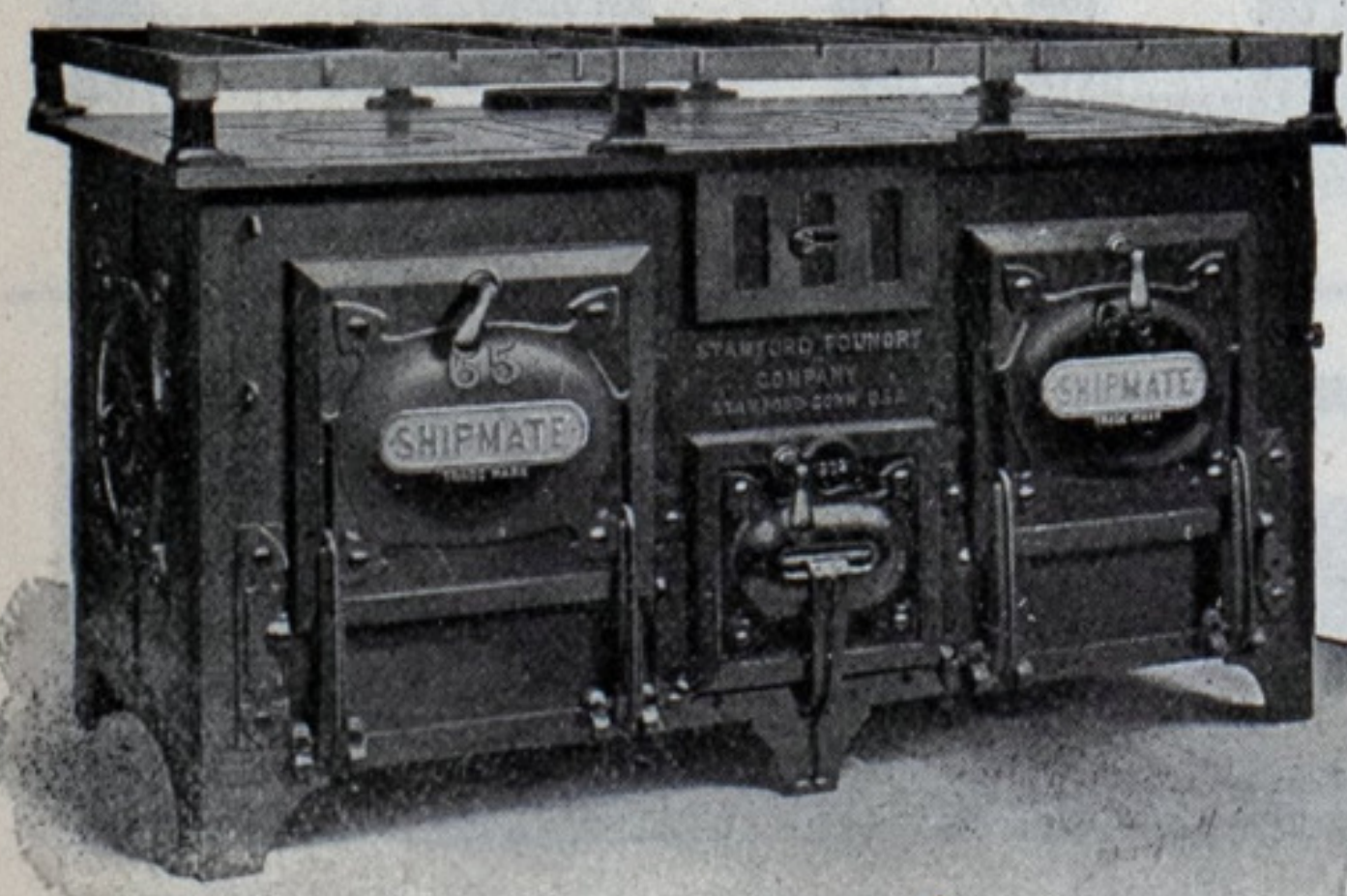
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Red Star Line's steamers Robert Mills and
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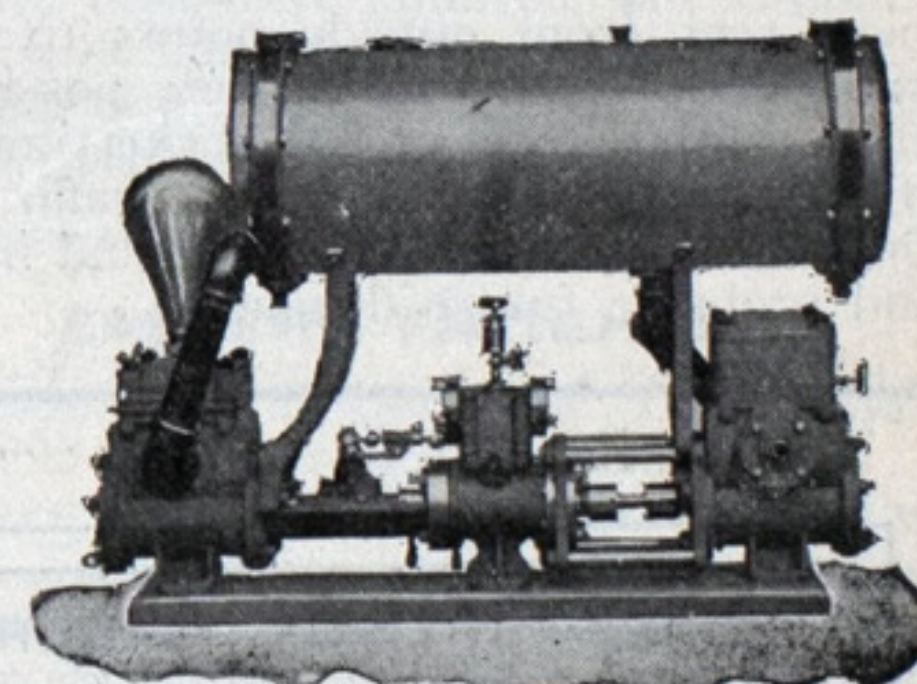


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Airrell, Mr. Saxon	Hustman, H
Allen, Elmer J. Frick	Irwin, Wm Fairbairn.
Bingham, Charley	Jenkins, Edwin J
Brown, Willie	Leonard, J W, Lindsay
Breidling, Wm. G.	Morris, J E
Bleavult, Clark-4, Rensselaer	Mussman, Abe
Beaton, Nelson	Maine, Leon E
Carr, Capt John	Meldrum, A H
Crew, E	Morrison, James N
Cole, F J	McPhee, Bernard
Cameron, J A	McGarrity, Sam
Conlin, John	McLauchlan, E
Clark, Edw	Philips, Max Livingstone
Chamberlain, Capt C H	Patterson, Walter
Dunn, Capt Thos.	Pope, Capt H H
Durkee, W W	Richards, Harry, N. Wind
Donoghue, Mrs J M	Ritchie, W S
Erickson, Emil	Rae, Capt G C
Ebel, Geo	Ross, Chas
Fortney, Harry, Arizona	Saucrante, A W
Farrington, H D	Steinhoff, Thos
Findlay, Wm, Falcon	Taylor, Geo H
Golden, John, W L Brown	Wilson, P Cornell
Grimason, H, M B Mitchell	Wilbert, Louis
Gunn, G B	Wheeler, Will
Hoover, Chas W	Ward, August
Hulligan, Frank	West, Grantley
	F. B. DICKERSON, P. M.

FLOTSAM, JETSAM AND LAGAN.

New Pintsch gas lights have been placed on the break-water at the upper canal at the "Soo." These lights do not demand the attention that the ordinary range light does. They have to be filled only once or twice a week.

The New York Marine Journal says: "It has been claimed that the U. S. S. Michigan, that was built at Erie, Pa. in 1844, was the first iron vessel built in the United States. This is not so. The Michigan is, however, the only war vessel belonging to the navy that has not seen war service." The U. S. S. Michigan was the first iron vessel put

together on the lakes, the metal being shipped from Pittsburg ready for construction.

The wreckage which has been picked up from time to time in the vicinity of Port Austin, is now believed to come from the schooner Hunter Savage, which went to the bottom 10 miles off Point Aux Barques two years ago.

Reports that James J. Hill is soon to retire from the presidency of the Great Northern Railroad and Steamship Co., have been revived. It is said that Louis W. Hill will succeed his father as head of the system July 1.

The body of one of the Carlson brothers drowned in Lake Michigamme last fall, together with the two Lavine brothers, was recovered last Sunday night. It makes the third body found after a search lasting practically ever since the quadruple drowning, seven months ago, and after the expenditures of large sums of money.

The ship groaned. But the Giddy Young Thing who was talking to the captain was a good sailor and didn't mind a bit of rough weather. "Doesn't it seem unnecessarily cruel, captain," she said, "to box a compass?" "Not any more so, miss," he replied, grimly, "than to paddle a canoe." And the ship groaned some more.—Chicago Tribune.

Some slighting work has been done at St. Joseph, Mich., for there has been found some more wreckage of the old City of Duluth at the mouth of the harbor. After a search by a diver he located a small hoisting engine, a portion of the keel with large frames attached, and a boiler north of the pier. Before additional piles can be driven for the crib it will be necessary to clear away the wreckage. The government contract called for the removal of all obstructions, leaving a clear fair bottom, the matter will be investigated.

W. H. Schindehette, one of the proprietors of the Bay City Yacht Works, Bay City, Mich., will start on a 1,100-mile voyage in a 40-foot yacht just completed for the Ohio River Bridge & Ferry Co., of Marietta, O. The boat is equipped with an 18 horse-power gasoline engine, and it is proposed to make the trip down the lakes to Toledo, thence via the Maumee canal to Cincinnati, and up the Ohio river to Marietta. The boat is to be used by its purchasers in light traffic between Marietta, O., and Williamsburg, W. Va. On his return Mr. Schindehette will have a similar trip to make at once in a 35-foot yacht built for the John Becker Lumber Co., of Williamsburg.

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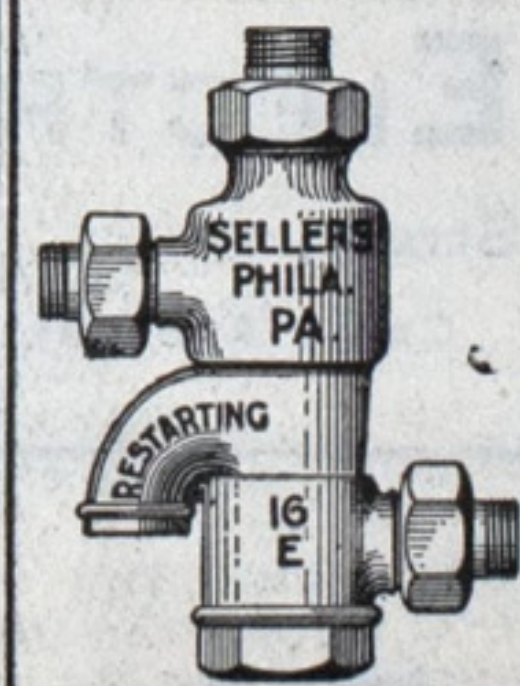
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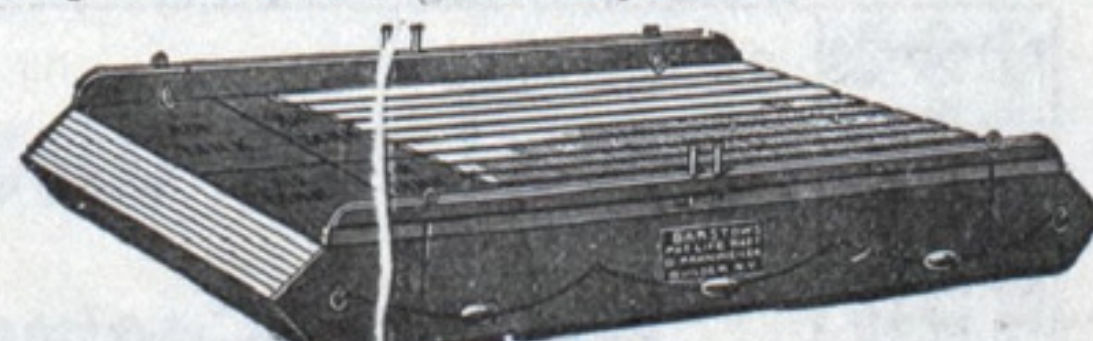
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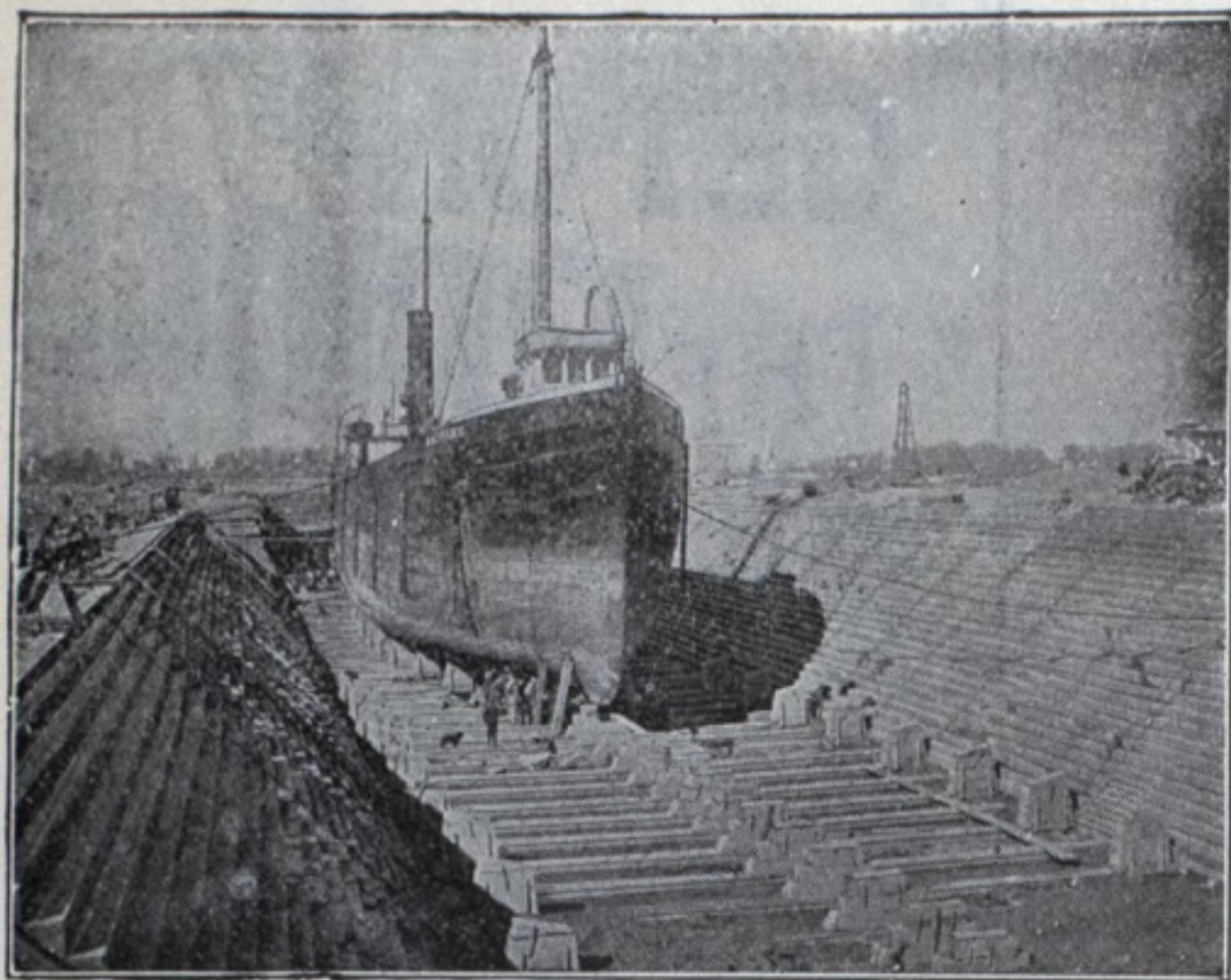
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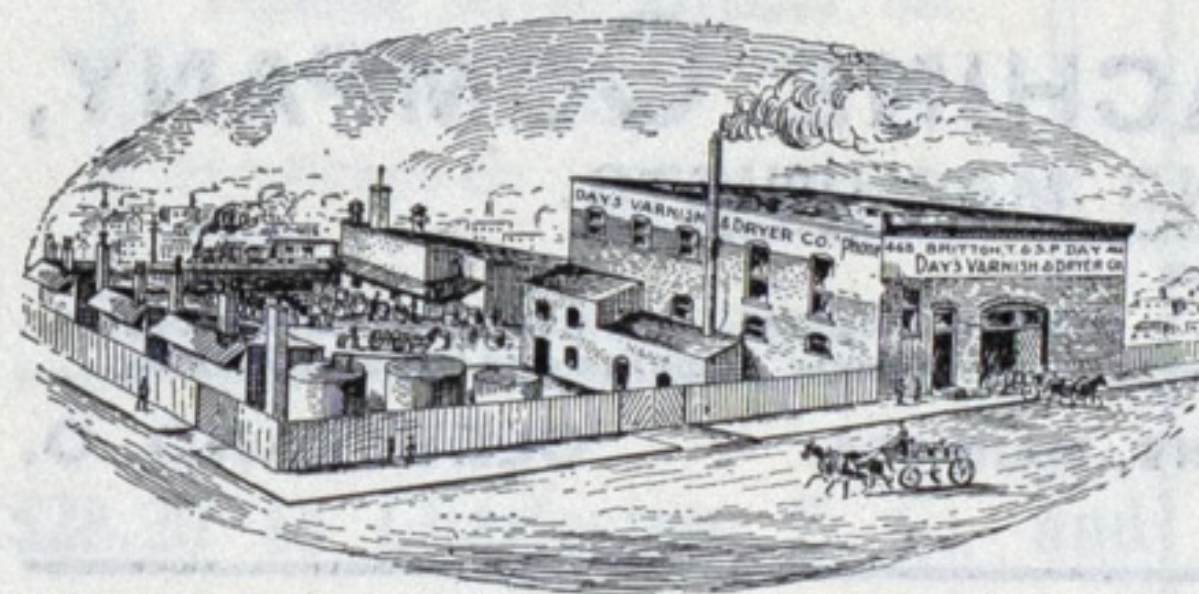
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